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AUTHORIZATION OF THE FEDERAL FIRE PREVENTION AND CONTROL ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON
SCIENCE, TECHNOLOGY, AND SPACE

OF THE

COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

ON

AUTHORIZATION OF THE FEDERAL FIRE PREVENTION AND CONTROL ACT

MARCH 26, 1985

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AUTHORIZATION OF THE FEDERAL FIRE PREVENTION AND CONTROL ACT

TUESDAY, MARCH 26, 1985

U.S. Senate,
Committee on Commerce, Science, and Transportation,
Subcommittee on Science, Technology, and Space,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:15 p.m., in room SR-253, Russell Senate Office Building, Hon. Slade Gorton (chairman of the subcommittee) presiding.

Staff members assigned to this hearing: David Cheney, professional staff member and Loretta Dunn, minority staff counsel.

OPENING STATEMENT BY SENATOR GORTON

Senator Gorton. Ever since Prometheus, fire has been a source of wonder and destruction. Today it is a leading cause of accidental death and property damage in United States.

The United States has one of the worst fire records of any country in the industrialized world. In 1983, fires killed more than 6,000 people and injured 135,000, and destroyed $6.6 billion worth of property. The deaths were disproportionately high among the poor, the elderly, and the very young, and were the highest among firefighters, who risked their lives every day to save the lives of others.

In 1974, Congress passed the Federal Fire Prevention and Control Act to provide Federal support for the efforts of local communities to prevent and to control fires. The Federal program focuses on things that local communities cannot do. It collects data on fires, sponsors research into the causes of fire and methods of reducing the damage from fires, and develops programs to educate both firefighters and the general public.

Although the Federal program has never been as extensive or well funded as originally envisioned, it is beginning to show results. The number of fire deaths in the United States are decreasing. But our fire death rate is still several times that of many other countries, and this suggests there is much more we can do.

In today's hearing we will look at the Federal fire program. We will look at the achievements, management, and direction of the programs of the U.S. Fire Administration and the National Fire Academy to see if we are doing what we should. We will also examine the effects of the 1986 budget on the fire program.

We will hear from Mr. Philip Schaenman, who has studied how other countries have achieved much lower fire death rates than ours. We will also hear from Mr. Howard Boyd, chairman of the

Joint Council of National Fire Service Organizations, on its perspective on the Federal fire program.

Senator Gore, do you have an opening statement?

OPENING STATEMENT BY SENATOR GORE

Senator **Gore**. Thank you very much, Mr. Chairman.

I am glad to be here today, and I particularly look forward to hearing the testimony a little later from Howard Boyd, who is a distinguished member of the fire-fighting community in America and an old personal friend. When I was a newspaper reporter on the Nashville Tennessean covering the police beat, which encompassed the fire beat, Chief Boyd set me straight on many a story and pointed me in the right direction, and I really learned a great deal from him. And I am looking forward to continuing that learning process a little bit later during this hearing.

I support the work of the National Fire Academy and the Fire Administration. But Mr. Chairman, I am troubled by some of the activities at the National Emergency Training Center. Last year as chairman of the House Subcommittee on Investigations and Oversight, which is part of the House full committee which is a counterpart to this one, I conducted a number of hearings into waste, fraud, and abuse at the National Emergency Training Center, some of whose programs we will be reviewing today.

That investigation revealed what in my opinion is an abysmal situation. Taxpayers' money was wasted by renovating an NETC dormitory into a residential apartment for the Director; an NETC contractor, the Triton Corp., charging the Government for Mr. Giuffrida and Mr. Valella to attend an expensive black tie political function in honor of Vice President Bush and President Reagan; Triton and the IMR Corp., another NETC contractor, double billing, triple billing, and even quadruple billing the Government, sometimes for services that had never been provided and sometimes with forged vouchers.

In addition, there was a long list of waste, fraud, and abuse and misuse of Government personnel and property. These and other matters are now the subject of a Justice Department investigation into the situation at FEMA, and it will continue to have my personal scrutiny and I trust the scrutiny of this committee.

However, it is not my intent to merely go over a list of abuses. Rather, Mr. Chairman, I believe an exercise of this kind is only useful and productive if we concentrate on what measures this committee might offer to ensure that these problems are not repeated in these programs, because the programs themselves are extremely valuable. I support them. This country cannot do without them.

My purpose from the very beginning in highlighting the abuse has not been to attack the programs at all—I believe the programs are very valuable—but rather, to eliminate the waste of taxpayers' funds and the abuse of the responsibility that is entrusted to those who have positions of responsibility in the Federal Emergency Management Administration and the division that we are looking at here today.

And so I look forward to continuing my active interest in this area and I look forward to hearing these witnesses.

Senator Hollings has an opening statement for the record.

[The statement follows:]

OPENING STATEMENT BY SENATOR HOLLINGS

This afternoon, the Committee will be examining the reauthorization of the Fire Prevention and Control Act of 1974. This Act established the United States Fire Administration, the National Fire Academy, and the Center for Fire Research at the National Bureau of Standards. The Committee held a hearing this morning on the Administration's budget proposal for the National Bureau of Standards, which once again includes eliminating the Center for Fire Research. This proposal should be closely scrutinized. The Committee has heard from a number of organizations protesting the elimination of the Center. It performs basic research on the causes and effects of fires. This Committee needs to examine closely the implications of eliminating this program.

The Fire Administration serves as the focus of federal fire prevention and control activities. The Fire Academy in Emmitsburg, Maryland, provides training for local and state professional and volunteer firefighters.

The witnesses today include representatives of the fire service community and the Committee will benefit from their views on the proposed budget for fiscal year 1986 for the Fire Administration and the Academy.

Senator GORTON. Our first witness will be Mr. Joseph Donovan, Superintendent of the National Fire Academy, accompanied by Mr. Edward Wall, Acting Administrator of the U.S. Fire Administraiton.

We are very sorry to hear about Mr. Bradgon's illness and we wish him a speedy recovery.

STATEMENT OF JOSEPH L. DONOVAN, SUPERINTENDENT, NATIONAL FIRE ACADEMY, FEDERAL EMERGENCY MANAGEMENT AGENCY; ACCOMPANIED BY EDWARD M. WALL, ACTING ADMINISTRATOR, U.S. FIRE ADMINISTRATION

Mr. DONOVAN. I am Joseph L. Donovan, Superintendent of the National Fire Academy in the Federal Emergency Management Agency. Today I am representing Clyde A. Bragdon, Jr., Administrator of the United States Fire Administration and the Acting Associate Director of FEMA's Training and Fire Programs Directorate.

As you know, Mr. Bragdon suffered a heart attack several weeks ago and is, therefore, unable to be here today. He continues to make a steady recovery and is resting at his home in Frederick, MD. It appears that his recovery is within the bounds that his doctors hoped for, and his recovery and recuperation period will take about 2 months. I might add that I saw him Saturday and he looks terrific. He cannot wait to get back to work.

With me is Mr. Edward M. Wall, the Acting Administrator of the U.S. Fire Administration. He will join me in answering the committee's questions.

Mr. Chairman, fire is a serious problem in the United States. Every single day in newspapers and on radio and television our senses are heightened by accounts of the ravages of fire and the tragedy of those affected by fire. Your committee today will consider the administration's request to reauthorize appropriations for the activities of the Federal Fire Prevention and Control Act, Public Law 93-498, and I am pleased to have this opportunity to appear before your subcommittee, Mr. Chairman, to justify this request.

The Federal Fire Prevention and Control Act became law in October 1974. It is therefore appropriate to take a moment to review our accomplishments and our goals as we enter the second decade of service to our citizens.

The stimulus for Federal involvement in fire prevention and control activities came from the President's National Commission on Fire Prevention and Control and the publication of their startling report, "America Burning." This dedicated blue ribbon commission recommended establishment of a National Fire Administration and presented a plan detailing how our fire losses in America could be cut in half in a decade. The report noted that each year 12,000 citizens were killed in fires, 300,000 were injured, and almost $3 billion worth of property was destroyed.

Progress has been made. Deaths have been reduced significantly over the past decade. But the United States still has one of the highest fire death rates in the industrialized world.

Our improved system of identifying problem areas gives us a clearer picture today of the fire problem. For example, in 1983: 6,000 people died from fires, including 108 fire fighters; 135,000 people were injured; and there were 2,300,000 fires, with over $6.6 billion worth of property losses.

Now, FEMA's two fire functions, the U.S. Fire Administration and the National Fire Academy, have separate roles. They share a common goal, to save lives and reduce losses from fires and related emergencies. The Fire Administration works to accomplish this goal through programs and research and applied engineering projects; and the Fire Academy through training and education.

Representing Mr. Bragdon's role as Administrator of the U.S. Fire Administration, I would like to present priorities for reducing fire losses in this country. The first step in solving any problem is understanding the cause. By collecting and analyzing State and local fire data through the National Fire Incident Reporting System, known as NFIRS, the Fire Administration staff pinpoints how many people are affected by fire, what areas of the country have the highest risks, what age and economic groups are most seriously threatened, and what types of factors cause the majority of fires.

Armed with this information, the Fire Administration is able to devise programs to put their resources to work in the areas of greatest risk. The priority areas identified are: Residential fires, arson, fire fighter health and safety, fire service multiagency operations, and fire service management efficiency.

Today we would like to focus on what the Fire Administration is doing in the most critical need area, residential fires. Residential fires are the Nation's predominant fire problem. Residential fires account for 80 percent of all fire deaths and 65 percent of all injuries. Yet only 40 percent of fires occur in residences. Residential fires kill and maim at an alarming rate. Accordingly, the goal for the second decade of the Fire Administration is establishing firesafe homes in every community of this country.

To promote residential fire safety, the U.S. Fire Administration is emphasizing two programs: Partnerhips Against Fire, a community volunteer fire prevention program, and the National Residential Sprinkler Program. These two programs are important to reducing the residential fire problem.

Fire is by and large a problem created by man. It follows that any solution to the problem will necessitate involving and educating the public to a greater degree in the nature of the problem. Apathy has always been fire's greatest ally.

Until we establish working relationships within the community to combat fire, our gains will be minimal. The Fire Administration seeks to create a cohesive partnership with the general public, the private sector, volunteer and community-based organizations, the fire service and government. The goal is to establish such a partnership.

The Partnerships Against Fire Program is precisely that type of program. Started in 1984, it is built around the concept of total community involvement. The various elements of the community share not just the responsibilities, but the benefits as well. Thirty pilot programs were established in ten States last year. Just last month, 10 more States were added, along with the District of Columbia.

Fire problems vary from community to community and no single effort can be tailored to meet the needs of every community. An important feature of this program is that the particular needs of the community are identified and fire safety measures fashioned to meet the needs of the community.

The beauty of these community programs is that they can be expanded, modified, and transferred to other communities with similar fire problems. It is an example of a local problem being solved at the local level with local involvement.

The second major initiative under way in the residential fire area is the advancement and use of quick-acting residential sprinklers. It would be naive to think that all fires can be and will be prevented. Therefore, we need to develop programs to protect our citizens, our homes and our property. Smoke detectors, a major program thrust of the Fire Administration for many years, have contributed to the saving of countless lives, but they only warn of the danger; they do not stop it.

We are now achieving technological improvements in fire protection and prevention that were not even considered a decade ago. These advances make fire safety in the home more feasible and practical than ever before. For example, quick-acting residential sprinkler systems can be installed for less than a dollar per square foot, a very small price to pay for fire and life safety. Depending on the heat spread and other factors, most quick-acting residential sprinkler heads will activate in 30 to 90 seconds after ignition, well before the fire department can respond.

Working in concert with other fire safety programs, residential sprinklers could be the breakthrough we have been searching for to save lives and reduce fire losses.

Now, Mr. Chairman, we would like to turn to the current programs and plans for the National Fire Academy, located at the National Emergency Training Center in Emmitsburg, MD.

The Federal Government purchased the site for the now National Emergency Training Center in the spring of 1979 and the first

National Fire Academy classes were held in January 1980. This is a remarkable accomplishment when one realizes that the staff was able to develop a curricula, hire faculty, provide student facilities, and deliver advanced training programs without precedent in a few short months.

In just 5 years of operation at the Emmitsburg campus, over 30,000 students from every State in the Union have been trained in a variety of courses created to advance the professional development of fire service personnel and of other persons engaged in fire prevention and control activities.

In these 5 years, the National Fire Academy has gained a national reputation as an institution of excellence, whose courses are eagerly sought by students desirous of improving their abilities and enhancing their potential to impact on our Nation's fire problem.

In addition to the on-campus courses, over 90,000 students have attended courses developed by the Fire Academy and delivered in every State throughout the country. These courses have been supplemented by courses where the Fire Academy trains State and local trainers, who in turn take the courses and train their local personnel. Over 40,000 State and local fire service personnel have been trained by these trainers since the program began in January of 1982.

Another training opportunity, referred to as our "open learning" program, provides fire service personnel the opportunity to continue educational opportunities at the upper college level that can result in a baccalaureate degree in a fire service curriculum. There have been 5,000 students who have availed themselves of this opportunity.

In fiscal year 1984, the Academy was responsible for the delivery of 1841 course offerings to 56,324 students, generating 1,268,435 hours of training activity throughout the United States. The costs of these programs are shared among the Federal Government, State and local governments, the individual students, and in some cases, by the private sector. The total Federal cost for this program in fiscal year 1984 was $10.7 million.

Our courses are continually updated with the infusion of new technology and information, and new courses are added each year to our curriculum. We are proud of our new master curriculum plan which defines the field of firefighter safety and professional development from top to bottom.

Because of our conviction that effective delivery of public services in an era of shrinking resources requires a conscious investment aimed at enhancing the quality of management in the public sector, the National Fire Academy and the United States Fire Administration have entered into an agreement with Harvard University that permits five senior fire service executives to participate in the John F. Kennedy School of Government at Harvard University each summer. This prestigious opportunity is another example of the emphasis we are placing on assisting the senior fire official to deal with the increasingly difficult task of delivery of an effective and efficient public service in a very competitive environment.

We are most concerned with our inability to accept all student applications for course admission. Unfortunately, our facility is not large enough to accommodate all the qualified applicants we receive; and we must operate on a first come, first served basis. In 1984, we had turned down 4,783 applicants.

This year, for instance, in just two hazardous materials courses, over 700 qualified applicants had to be turned away. In the fire arson investigation course, which includes both law enforcement and fire personnel, nearly 400 applicants had to be rejected due to space limitations.

Because of our limited capability, the Congress has approved expanding development of our facility in a western campus in Carson City, NV. The opening of this new campus will complement our existing campus in Emmitsburg, MD. The NETC site will continue to be the prime location for course development and the executive fire officer and command and staff programs that require the national perspective and interaction for which the Academy has become known.

We appear before this committee proud of our accomplishments and with a positive spirit in reporting this Administration's response to the mandates of the Federal Fire Prevention and Control Act. However, Mr. Chairman, we cannot delude you or the citizens of this country with the suggestion that the national fire problem has been solved. Although there has been a significant reduction in the number of fire deaths, the enormous losses are still unacceptable. These fire losses cannot be ignored by a nation concerned for the welfare of its citizens.

We therefore respectfully request the authorization of appropriations in the amount of $19,322,000 for activities under the Federal Fire Prevention and Control Act of 1974.

Mr. Chairman, this concludes my statement. We will be happy to respond to any questions you have or the other members of your subcommittee may have.

Senator GORTON. Obviously, the budget proposals which have been presented to us do not necessarily come from the agency itself, but through OMB. I wonder if you would discuss the effect of the reductions in these budgets. Do you think that you will have a drop in enrollment at the National Fire Academy as a result?

Mr. DONOVAN. I answered that question before the House authorization committee in this way: I wish I had a crystal ball. It is very hard to judge that. We have talked to many people and there are pros and cons. Some of the fire service people say there will be no effect, they will just budget for the travel to get their people to the Academy. And others say that they are going to have a difficult time.

At this point in the ball game, it is very hard to judge. There is a general feeling that it might not have any effect at all.

Senator GORTON. What kind of fire departments in various parts of the country would be most severely affected by cuts in this type of program?

Mr. DONOVAN. Well, the indication from the questions we are asking and what we are getting back is that the large cities who have a budget crunch within their communities, the very large fire departments who in fact allow their people to come on vacation time and do not allow them as part of their operation to come, and then the volunteer sector seems to indicate they might have a problem. Some volunteer fire departments say they will not have a problem.

Senator GORTON. So it will vary from place to place, department to department?

Mr. DONOVAN. Absolutely. That is why it is so hard to judge.

Senator GORTON. What is the rationale for establishing a second National Emergency Training Center when the cuts in the stipend program may make it difficult for students to attend the one we have?

Mr. DONOVAN. Well, the rationale was that we have an immediate need because of the lack of adequate classroom space and adequate dormitory space. The decision was made to open up a western campus to give access to those fire service personnel who want to get in technical courses like hazardous materials, arson investigation, and fire prevention courses that are overbooked. Applications are double what we can accept at Emmitsburg.

We just do not have the room at Emmitsburg, and the decision was made, rather than go for construction at Emmitsburg and spend all of that time trying to get a facility going, to look for a facility that the Government could take and run with, that was in existence.

Senator GORTON. What do you think the effects will be of cuts in the national community volunteer fire service program? Are you going to be able to utilize lessons learned from the pilot program or from a pilot program in one or a few communities for the rest of the country?

Mr. DONOVAN. I am going to ask Mr. Wall to answer that, please.

Mr. WALL. The community-based volunteer fire prevention program will be stretched out over a longer period of time, and we anticipate by 1992 covering all 50 States. What it will mean is that we will give a more intensive effort in 1985 to get the communities that are in the program to be more self-sufficient and to leverage private sector involvement.

The community-based volunteer project was never meant to become an institutionalized program of the Fire Administration. It was meant to go out and plant seeds in the various States and involve them more directly in the fire problem and teach them how to leverage private sector funds to keep these community groups running.

To answer the second part of your question, we are looking at each of the programs as they come up for second year funding; and we intend to select the ones that we believe have the greatest degree of transferability. Every program will not work in every location.

I have heard Mr. Schaenman describe the various fire prevention programs in Asia, saying that a certain culture would respond to a certain stimulus. In Hong Kong perhaps it was keeping the capitalistic ideal going and it was easy to write a fire prevention message.

When you are writing a fire prevention message for Los Angeles County, where there are more Hispanics than in most of the cities of Mexico and probably more Asian-Pacific people than there are in many of the Asiatic cities, it is difficult to say that one model will suffice everywhere. So we want to take models that we believe can be replicated and use those as the entree into other areas.

Mr. **Donovan**. Could I also add to that. As they learn from these projects, what they learn then gets transferred into our fire prevention public education curriculum within the National Fire Academy.

Senator **Gorton**. Mr. Schaenman, our next witness, will talk to us about how other nations have achieved far lower fire death rates than the United States has. Have the administration and the Academy done formal studies to determine which factors that lead to lower fire death rates in other countries might be profitably transferred here?

Mr. **Wall**. I think we have looked at that for many years in various projects, and the basic problem is that the fire problem in the United States is not just a fire problem. It is an economic problem. It is a social problem. It is talking about changing the attitudes and the values of an entire population.

I know when I was going through graduate school I was an older student; and it used to annoy me to hear a young, brash professor say that you can tell the level of civilization in a country by holding up its prison system. Then he would promptly pick up Sweden as the example, never mentioning to the other students in the class that Swedish jails were full of Swedes.

Well, the analogy can be applied to the fire problem in the United States. We have something like 25,000 separate and distinct operating fire departments in the United States, over which very little control other than on a local level is exercised. We are dealing with major populations that have different cultural outlooks and values.

I come out of the city of Newark, NJ, having served there 26 years and retired as a deputy fire chief, and I know the programs that would work in Sunnyvale, CA, just will not cut the mustard in Newark, NJ, and the opposite side of the coin is also true.

What works in Hong Kong or Japan, although it may have some degree of transferability, will not in its entirely work in the United States. Our people will subject themselves to much less legal or administrative interference in their lives. It is very difficult for fire departments to legally enforce inspection of other than commercial and industrial buildings.

Once you begin talking about doing fire prevention inspections in one- and two-family homes, you immediately encounter resistance on the basis of invasion of privacy. We even find resistance from people for smoke detector ordinances, that installation of smoke detectors is an invasion of privacy.

We recognize this, and we have been trying through public education and public awareness campaigns to turn this around. We hope in fiscal year 1985 to launch a major media campaign in support of the residential quick-acting sprinkler system that we see down the road as being something that will truly and effectively prevent people from dying in the numbers they are dying in the United States.

Senator **Gorton**. What percentage of the fire administration's contracts have been awarded on a noncompetitive basis in the course of the last 5 years? Has there been any recent change in that percentage?

Mr. WALL. I can submit the 5-year records for the record[1] if you wish, Senator. I am not prepared to discuss the 5-year record today. I can give you a picture of 1985 or the current year. We are working with a program budget of just about $8 million, and of that $8 million about $3.5 million is competitive. The other is sole sourced.

Senator GORTON. Is that a larger share than would have been true in the previous years?

Mr. WALL. I would say that is true. We are moving more toward competitiveness, and even the projects that are sole sourced because of the uniqueness of the organizations are open to competitive challenge.

Before the sole source can be awarded it is advertised in the Commerce Business Daily, and people have 30 or 45 days to respond if they have a project that they think is worthwhile being considered.

We definitely are moving more toward the competitive picture. If I had my way, I think that I would like to be able to sit here and tell you that we will be 100 percent competitive in 2 years. I do not think that is going to be the picture.

If we are dealing with something that the International Association of Fire Fighters are uniquely equipped to do for us, I think that they should be sole sourced.

Senator GORTON. Is that the organization that will receive the largest amount of contract money in the past 5 years?

Mr. WALL. No, I would not say so.

Senator GORTON. What kind have, and how many have been fire service organizations, and what share is academic research?

Mr. WALL. I would be glad to submit the detail for the record.[2]

Senator GORTON. Please do.

Mr. WALL. As an overall picture for you, of that $8 million program budget, organizations affiliated with the Joint Council received $1.9 million of an $8 million budget. State and local governments, on the other hand, receive something like $2.9 million.

Senator GORTON. And academic institutions or academic research?

Mr. WALL. Most of our research in the Fire Administration is applied research, and the organization we use for most of it is Factory Mutual. We do not deal with universities that closely.

Senator GORTON. Does the Fire Administration have enough manpower adequately to oversee its contractors in order to prevent waste or duplication?

Mr. WALL. I was in the unique position of being the deputy superintendent for resident programs at the National Fire Academy in fiscal year 1983 when a decision was made to zero fund the Fire Administration, I subsequently was given the title of chairman of the working committee, and I and several other people reorganized the Fire Administration. The Fire Administration was reorganized with a $3.5 million program budget and 20 full-time people.

Since that time, Congress has seen fit to almost triple our program budget, but FTE's full-time equivalent positions have not been increased I might add that we have other responsibilities also.

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[1] See answer to majority question No. 5.

[2] See answer 6 to majority question.

The Cigarette Safety Act, which was passed last year, has a direct impact upon us. The Fire Administrator sits as vice chairman of the Interagency Committee with CPSC and HHS, and that, too, is a workload that has been imposed from outside over which we have very little control.

Senator GORTON. What share of the money in the national community volunteer fire prevention program in fact got to the communities served by it, and what share was used in simply administering the program?

Mr. WALL. A clean cut is about $700,000 to the communities and $300,000 in technical support, training, and traveling. The project was set up to involve the States, and as such, we encouraged each State Governor to create an ad hoc committee. The State receives a $10,000 grant to administer that committee.

We then in turn train the members of that committee on how to go into the community and identify fire problems and assist the community-based organizations in their work. We also take representatives from the community-based organization, bring them to the Emmitsburg training site, and teach them skills required in developing and administrating community-based groups.

And the third phase of that is that through the contractors we go out and give onsite technical assistance. With a small professional staff, it would be impossible to conduct a truly nationwide community-based volunteer project without the heavy involvement of contractors. Otherwise, it would be taking Federal money and putting it on the stump and going away.

The whole idea of the community-based volunteer project is not just to fund a local group to do something. It is to go in there and build their capacity so that when we leave after 2 or 3 years they can still function.

Senator GORTON. I would like you to submit more precise answers to these questions in writing, and we will submit some more questions to you.

Senator GORTON. At this point I would like to hear the questions which Senator Gore will place to you from his thorough expertise in this subject matter.

Senator.

Senator GORE. Well, thank you, Mr. Chairman. That may overstate it a little bit, but I appreciate it.

Mr. Donovan, how long have you been at FEMA?

Mr. DONOVAN. As superintendent of the Fire Academy, since January, the middle of January 1982.

Senator GORE. Since January 1982. When did Mr. Bragdon take over?

Mr. DONOVAN. He became Fire Administrator in late June 1984, and became Acting Associate Director for Training and Fire Programs around the 1st of August.

Senator GORE. I have heard some pretty good things about what he and the management team there have been trying to do since he took over, and I certainly wish him well as he recovers.

Are you familiar with the so-called Bert Smith report? This was the review of the NETC management practices by the accounting firm of Bert Smith & Co.

Mr. DONOVAN. No, sir; I am not.

Senator GORE. What is your position?

Mr. DONOVAN. Superintendent of the National Fire Academy.

Senator GORE. That makes up two-thirds of the NETC, does it not?

Mr. DONOVAN. Well, there are three operating units and two staff functions. There is an office of management administration which handles all of the facility support, the bookkeeping activities, budget, housekeeping, hotel operation.

Senator GORE. Well, it is at the NETC, right?

Mr. DONOVAN. The Fire Academy is, yes. But there are five operations at NETC. The Fire Academy is one of the line units. The Fire Administration is one, the Fire Academy is one, and the Emergency Management Institute is one.

Senator GORE. Well, I do not understand why you do not know about it.

Mr. DONOVAN. I have never seen it, sir.

Senator GORE. I am not saying that in a pejorative way. But let me just ask you whether or not you think the question is reasonable. This is a review that is required by the Financial Integrity Act, that requires agencies to subject themselves to private accounting and management analysis on a regular basis.

A little over a year ago, this was a major review of the management and financial controls at NETC which was submitted by the Bert Smith Co., and you say that you have never heard of it.

Mr. DONOVAN. I have never seen it. I do not know what you are talking about.

Senator GORE. You have never seen it and never heard about it?

Mr. DONOVAN. I knew there was some kind of study done on whatever, that Fraud, Waste, and Abuse Act, but I never saw it. And as far as I know, it only dealt with management administration.

Senator GORE. Have you ever heard of it, Mr. Wall?

Mr. WALL. I have heard of it, and I have heard that there was a survey being done for fraud, waste, and abuse, but I have never seen the Smith report.

Senator GORE. Well, gee, I really do not understand why these things would be done if the people running the programs do not see them. Maybe we ought to put this, if you do not object, Mr. Chairman—I would like to request that we put the Bert Smith report in the record.[1]

Senator GORTON. I do not object at all, Senator.

Senator GORE. What it showed was, and I am quoting here, "a high percentage of noncompetitive procurements, a large number awarded to a selected few organizations, noncompliance with an OMB directive on reducing and controlling wasteful spending, contracts and grants awarded in fourth quarter substantially exceeded average for the first three quarters," and I might add parenthetically that in 1 year we found that the fourth quarter contracts let were 603 percent of the average for the first three quarters in 1 year. Now that really was an atypical year.

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[1] The report is available through FEMA, the Committee has retained a copy in the files.

They also found that "NETC's installation planning board was not functioning as anticipated and had not formally met for more than 6 months, a lack of in-house capability to perform critical reviews of designs and specs prepared by the architectural and engineering firms, inadequate financial monitoring of grant recipients, no system in place to identify recipients who do not meet financial reporting requirements."

The method by which you handled or by which the Emmitsburg procurement office handled an indefinite quantity contract may give the appearance of contract splitting. "Noncompliance with regulations and procedures relating to the receipt and acceptance of unsolicited proposals." They go into a little more detail on that. "And no technical review or cost price analysis performed on major accepted grant proposal. Inadequate segregation of functions," and it goes on.

Now, just to focus in on this noncompetitive procurement problem which the chairman asked you about, the year that this was submitted, your noncompetitive procurements were 65 percent. In the year after this major report was submitted, they went up to 76 percent.

I was going to ask you why that would be, since they clearly highlighted that for you, but if you have never seen it, then maybe the question will not elicit the kind of answer that would be helpful. But it just seems to me that this is evidence of serious mismanagement.

Now, some of the items that I listed in my opening statement occurred after the financial integrity review by the Bert Smith Co. was presented to those in charge of the NETC.

I am frustrated because you have never heard of this thing, so let me start by asking you, do you not think that it is unusual that a major review of this kind of management waste, et cetera, would not come to your attention if you have direct line responsibility for two-thirds of the activities at the NETC?

Mr. **Donovan**. Well, the National Fire Academy, in terms of budget, the NETC budget, and I have got the 1985 budget in front of me—well, it does include the Fire Administration, $44 million. Of that $44 million, the National Fire Academy's budget is $9.7 million.

Senator **Gore**. Well, I thought that two-thirds of what went on at the NETC was fire related. Am I mistaken on that?

Mr. **Donovan**. Well, you have got the Fire Administration and the Fire Academy. The Fire Administration's budget is—pardon me. The Fire Administration's budget is $9.7, and the Fire Academy's is $13.2. I misread that. And that is $22, almost $23 million, which is a little more than half of the total, the total dollars spent.

Senator **Gore**. So you two gentlemen between you have responsibility for more than half of all of the activities at the NETC, correct?

Mr. **Donovan**. That is correct in terms of dollars.

Senator **Gore**. And neither one of you has ever heard of the management review?

Mr. **Wall**. I have heard of elements as you read through them, but I never heard the name Smith report attached to it. The elements that you are talking about have been discussed. We have been instructed to be more aware of competitiveness, which we have done. We have been instructed to meet with the installation planning board, which we do every month.

Senator GORE. Did either one of you have parts of the Triton contract?

Mr. WALL. The Fire Administration had no part of the Triton contract.

Mr. DONOVAN. The Fire Academy had no part of the Triton contract.

Senator GORE. Now, what about the Analytical Systems Engineering Corp.? Did either of you do business with them?

Mr. DONOVAN. No, sir.

Mr. WALL. No, sir.

Senator GORE. Now, why would your sole source contracts go up after this report? Do you know why?

Mr. WALL. I cannot respond to the overall picture. I can only respond to what goes on within the Fire Administration, and I do not believe that to be an accurate statement concerning the Fire Administration. I believe that each year since reorganization we have made an attempt to become more competitive.

SENATOR GORE. Now, wait 1 second here. Mr. Donovan, you are appearing here as a witness, not just as superintendent of the National Fire Academy. Is that not correct? Are you not representing——

Mr. DONOVAN. I am representing Mr. Bragdon. That is right.

Senator GORE. Did you prepare yourself to respond to questions about Mr. Bragdon's responsibilities?

Mr. DONOVAN. I am speaking on behalf of the reauthorization of the Federal Fire Prevention and Control Act, and I think that——

Senator GORE. Who is acting administrator of the NETC now?

Mr. DONOVAN. A man by the name of Fravel Brown, who is a special assistant to the director of FEMA.

Senator GORE. Mr. Wall, I have here an affidavit from Mr. Duane Murray. I believe you are familiar with Mr. Murray. Is that correct?

Mr. WALL. Yes, sir.

Senator GORE. His title is chief of administration.

Mr. WALL. That is true.

Senator GORE. He says that "Nearly all of the expenditures from the U.S. Fire Administration and some from the Fire Academy are made on a sole-source basis," and he says, "I was informed by Mr. Edward Wall that Mr. Villella, who was the predecessor of Mr. Bragdon, that Mr. Villella had met with members of the fire community such as the Joint Council of Fire Service Organizations, International Society of Fire Service Instructors," and he goes on to name the others, "and indicated how much each organization could expect to receive that year in contract awards."

Is that true, that the director virtually guaranteed the organizations their funding levels before any contract review had even taken place?

Mr. WALL. Never in my presence.

Senator GORE. Did you tell Mr. Murray that?

Mr. WALL. I do not know why I would tell Mr. Murray something that did not occur.

Senator GORE. Well, it is a sworn affidavit. That is the reason I ask.

Mr. WALL. We have appeared before the Joint Council each year, and we do that to get the priorities of the Fire Service. They are the spokespeople for the working Fire Service. But I was never a party to any action where Villella or anyone else told people they had a certain piece of an action.

Senator GORE. And you have no knowledge that Mr. Villella ever did that?

Mr. WALL. Not to my direct knowledge, no.

Senator GORE. What about to your indirect knowledge?

Mr. WALL. How could I tell you something indirectly? My answer to it is no.

Senator GORE. And you deny what Mr. Murray says in his sworn affidavit?

Mr. WALL. That is a third-party conversation that I do not recall having with Mr. Murray, and I do not know why I would say that, because I have never been in anyone's presence where any organizations were guaranteed any set amount or even told that they would have any idea of having a set amount.

Senator GORE. So you do not deny it. It is just that you do not recall it?

Mr. WALL. I deny that ever happened in front of me.

Senator GORE. Do you deny telling Mr. Murray? That is the question.

Mr. WALL. Of course I deny telling him that.

Senator GORE. Now, according to another person, Mr. George Washnis—do you know him?

Mr. WALL. Mr. Washnis was hired as a consultant to do some writing on the initial phase of the community volunteer project.

Senator GORE. He said that he was switched from being a subcontractor to the Triton Corp. and he was switched over to working for one of the fire groups who got one of these sole-source contracts, and that you told him that the reason for switching him over to the other contract was "they haven't got enough to do for their money anyway."

Is that right?

Mr. WALL. Mr. Washnis did not work directly for the U.S. Fire Administration. Mr. Washnis was hired as a subcontractor on the NETC contract. He did some preliminary work on a community fire prevention manual in the fall of 1983. We were not satisfied with his work and chose not to seek any further services. The National Fire Protection Association was under contract to the USFA to produce and pilot test a community fire prevention manual. Mr. Washnis contacted the NFPA and was interviewed and subsequently hired by them to work on that project. I played no role in his obtaining that work.

Senator GORE. Did you switch him over to one of the service groups?

Mr. WALL. No, sir, it is not within my province to switch anyone over.

Senator GORE. Did he subequently get paid under one of those contracts?

Mr. WALL. He was still working, but not for me.

Senator GORE. He did in fact leave the Triton contract and continue working, but got paid under one of the service organization contracts. Is that not right?

Mr. WALL. Sir, when he was working on the manual for the U.S. Fire Administration, he was working as a consultant to us under contract. I have no knowledge of whatever arrangements were made after I did not renew him.

Senator GORE. So you deny his statement? You deny that his statement is true that he had a conversation with you and that you told him that you were going to switch him over there because they did not have enough to do for the money they were receiving?

Mr. WALL. I have no knowledge of that conversation, and it sounds like a very unprofessional statement to make.

Senator GORE. Well, here is the quote: "Wall stated to me, why don't we put you on the NFPA contract, because they are not doing all that much for their money anyway?'

Mr. WALL. He never went on an NFPA contract, and I have no idea what NFPA contract he is talking about.

Senator GORE. Well, I want to emphasize that neither of the two things that I am questioning you about which you say you do not recall having occurred would, if true, constitute any sort of venal conduct, and I do not want my tone in questioning to imply that.

I think what it does show is that there are serious management problems over there. I do believe that Mr. Bragdon is making efforts to try to get them under control, but quite frankly, Mr. Chairman, I remain very concerned about how the taxpayers' money is being spent over here and what kinds of controls are in place.

I am really surprised that this financial integrity review, which was very lengthy and detailed, is something that these gentlemen are not familiar with, and I just want to say for the record that I am going to continue to be very, very diligent in scrutinizing the way FEMA is spending the public's money.

And as a member of this subcommittee I look forward to joining you, Mr. Chairman, in protecting the taxpayers and trying to make certain that these valuable programs are carried out in an effective way that protects the public.

Senator GORTON. Your contribution is greatly appreciated. And we are going to want a detailed set of answers to the questions which we have asked and will submit as we can get. Senator Gore is entirely right.

With that, I thank you both.

Mr. DONOVAN. Mr. Chairman, could I just make a point?

Senator GORTON. You may.

Mr. DONOVAN. The 1984 budget for the National Fire Academy is $9.8 million, of which $4,166,000 was for salary and expenses. Of the 80 positions authorized in the Fire Academy, 38 come under my purview to manage; $2,409,000 of our programmatic budget went to NETC site administration, which leaves a little more than $3 million that I am responsible programmatically to manage.

Of that $3 million, almost $1,400,000 was spent for contract adjunct, facility, or development people, and another $1 million was spent for student stipends. It leaves very little money for me as superintendent of the National Fire Academy to have direct responsibility for managing.

[The statement follows:]

STATEMENT OF CLYDE A. BRAGDON, JR., ADMINISTRATOR, U.S. FIRE ADMINISTRATION AND ACTING ADMINISTRATOR OF THE TRAINING AND FIRE PROGRAMS DIRECTORATE

I am Joseph L. Donovan, Superintendent of the National Fire Academy (NFA) in the Federal Emergency Management Agency (FEMA). Today I am representing Clyde A. Bragdon, Jr., Administrator of the United States Fire Administration (USFA), and the Acting Associate Director of FEMA's Training and Fire Programs Directorate.

As you know, Mr. Bragdon suffered a heart attack several weeks ago and is therefore unable to be here today. He continues to make a steady recovery and is resting at his home in Frederick, Maryland. It appears that his recovery is within the bounds his doctors hoped for and his recovery and recuperation period will take about two months.

With me is Mr. Edward M. Wall, the Acting Administrator of the U.S. Fire Administration. He will join me in answering the Committee's questions.

Mr. Chairman, fire is a serious problem in the United States. Every single day in newspapers and on radio and television our senses are heightened by accounts of the ravages of fire and the tragedy of those affected by fire. Your committee today will consider the Administration's request to reauthorize appropriations for the activities of the Federal Fire Prevention and Control Act, Public Law 93-498, and I am pleased to have this opportunity to appear before your Subcommittee, Mr. Chairman, to justify this request.

The Federal Fire Prevention and Control Act became law in October 1974. It is therefore appropriate to take a moment to review our accomplishments and our goals as we enter the second decade of service to our citizens.

The stimulus for Federal involvement in fire prevention and control activities came from the President's National Commission on Fire Prevention and Control, and the publication of their startling report, AMERICA BURNING. This dedicated blue ribbon commission recommended establishment of a national fire administration and presented a plan detailing how fire losses in America could be cut in half—in a decade. The report noted that each year 12,000 citizens were killed in fires, 300,000 were injured, and almost $3,000,000,000 worth of property was destroyed. Progress has been made. Deaths have been reduced significantly over the past decade but the United States still has one of the highest fire death rates in the industrialized world.

Our improved system of identifying problem areas gives us a clearer picture today of the fire problem. For example in 1983: 6,000 people died from fires, including 108 firefighters; 135,000 people were injured and there were 2,300,000 fires with over $6,600,000,000 worth of property losses.

The Federal government has had a "fire focus" since 1975 when President Ford appointed Howard Tipton as the first Administrator of the USFA. Since the inception of the USFA the various Administrators and staff have worked assiduously on focusing attention on America's fire program and on developing programs to reduce the annual loss of life to fire. They have been successful in many areas. Many factors have contributed to the loss of life reductions. We think the USFA and NFA can share in the credit due in part to their efforts in public fire education and in the development and implementation of the smoke detector technology. There was a significant sharing of roles in these areas with the National Bureau of Standards Center for Fire Research and the Consumer Product Safety Commission, a statement of cooperation among Federal agencies.

Mr. Bragdon has declared his intent to continue building on the foundation established by his predecessors. FEMA's fire programs will continue to be the preeminent force in focusing attention on the fire problem and solutions to those problems. We recognize that the ultimate solution to the fire loss problem resides at the local level. We, therefore, will continue to offer support that will build capacity at the local level to deal with that realization. We are fortunate to have available a network of over one million paid and volunteer fire service people who, through their local departments, form the nucleus of support to accomplish the mission we have. That support and donated time is essential as we strive together to reduce fire losses.

Since becoming Administrator, and assuming the position of Associate Director for Training and Fire Programs on an acting basis, Mr. Bragdon has experienced a strong level of support given the fire programs by this Administration; by Mr. Louis O. Giuffrida, the Director of FEMA; and by other elements within our agency. He is also heartened by the level of interest and support we have received from the Congress. We are grateful to receive such support.

While FEMA's two fire functions, the United States Fire Administration and the National Fire Academy have separate roles, they share a common goal—to save lives and reduce losses from fires and related emergencies.

USFA works to accomplish this goal through programs and research and applied engineering projects; NFA through training and education.

Representing Mr. Bragdon's role as Administrator of the U.S. Fire Administration, I would like to present priorities for reducing fire losses in this country.

The first step in solving any problem is understanding the cause. By collecting and analyzing state and local fire data through the National Fire Incident Reporting System (NFIRS), USFA staff pinpoints how many people are affected by fire, what areas of the country have the highest risks, what age and economic groups are most seriously threatened, and what types of factors cause the majority of fires. Armed with this information, USFA is able to devise programs to put their resources to work in the areas of greatest risk.

The priority areas identified are: Residential fires; arson; firefighter health and safety; fire service multiagency operations; fire service management efficiency.

Today we would like to focus on what USFA is doing in the most critical need area, residential fires.

Residential fires are the nation's predominant fire problem. Residential fires account for 80% of all fire deaths and 65% of all injuries. Yet only 40% of fires occur in residences. Residential fires kill and maim at an alarming rate. Accordingly, the goal for the second decade of the Fire Administration is establishing Fire Safe Homes in every community of this country.

To promote residential fire safety, USFA is emphasizing two programs; Partnerships Against Fire, a community volunteer fire prevention program, and the national Residential Sprinkler program. These two programs are important to reducing the residential fire problem.

Fire is, by and large a problem created by man. It follows that any solution to the problem will necessitate involving and educating the public to a greater degree in the nature of the problem. Apathy has alway been fire's greatest ally. Until we establish working relationships within the community to combat fire, our gains will be minimal. USFA seeks to create a cohesive partnership with the general public, the private sector, volunteer and community-based organizations, the fire service and government. The goal is to establish such a partnership.

The Partnerships Against Fire program is precisely that type of program. Started in 1984, it is built around the concept of total community involvement. The various elements of the community share not just the responsibilities but the benefits as well. Thirty pilot programs were established in 10 states last year. Just last month, 10 more states were added, along with the District of Columbia.

Fire problems vary from community to community and no single effort can be tailored to meet the needs of every community. An important feature of this program is that the particular needs of the community are identified and fire safety measures fashioned to meet the needs of the community. There are three overall objectives in the Partnerships Against Fire program:

1. Increased awareness of the fire problem by the community participants: its citizens, business, volunteers and government leaders.
2. Strengthening of existing fire programs and creation of new ones.
3. Involvement of community volunteers as the cohesive agents through which the program works.

We point with pride to the first 30 programs some of which are up and operating. Let me illustrate how these work. In the State of Pennsylvania, the Museum of Scientific Discovery in Harrisburg was selected to set up an urban fire safety program. The Museum staff developed a computer project to educate children about fire and smoke spread in the home. The program provides each child with a personalized fire escape plan that can be taken home, discussed and practiced. In addition, a room is being designed in the Museum where actual escapes can be practiced.

The beauty of these community programs is that they can be expanded, modified and transferred to other communities with similar fire problems. It is an example of a local problem being solved as the local level with local involvement. We believe self-help is a key to federal/state/local relationships. Government cannot and should not do it all.

The second major initiative underway in the residential fire area is the advancement and use of quick acting residential sprinklers. It would be naive to think that all fires can and will be prevented. Therefore, we need to develop programs to protect citizens, our homes and our property. Smoke detectors, a major program thrust of USFA for many years, have contributed to the saving of countless lives. But they only warn of the danger; they do not stop it.

We are now achieving technological improvements in fire protection and prevention that were not even considered a decade ago. These advances make fire safety in the home more feasible and practical than ever before. For example, quick residential sprinkler systems can be installed for less than a dollar per square foot, a very small price to pay for fire and life safety. Depending on the heat spread and other factors, most quick acting residential sprinkler heads will activate in 30-90 seconds after ignition, well before the fire department can respond.

In order for builder or owner to make an informed decision on using the new quick acting residential sprinkler system, it is necessary to know the cost/benefit ratio. Currently USFA has a project underway with the National Association of Homebuilders to look at cost/benefit analysis. The results of this effort, we believe, will be to encourage builders, developers and owners to include sprinkler systems in their construction and design. With more than one million housing starts a year, we know that quick acting residential sprinklers in every home will not happen today or tomorrow. Retrofitting existing dwellings will be a large task, also. But we now have the technology to start building residences for a fire safe America.

Working in concert with other fire safety programs, residential sprinklers could be the breakthrough we have been searching for to save lives and reduce fire losses.

To increase public awareness, USFA is retrofitting 20 mobile home trailers with quick acting residential sprinkler systems to demonstrate their effectiveness. Designed to simulate typical living areas, these trailers will be located around the country and will be available for public demonstrations. We would encourage any member of the Subcommittee to observe one of these sprinkler demonstrations. Very simply, it works this way: the fire is set, the flames appear, the sprinkler goes off and the fire is extinguished, usually before the smoke detector has even sounded.

There are a number of other efforts underway in the residential fire area that include Juvenille Firesetter Counseling and the Sesame Street Fire Safety Program.

USFA has numerous programs in the four other problem areas we identified earlier: arson, firefighter health and safety, fire service multi-agency operations and fire service management efficiency. In the interest of time, we ask that a listing of these programs be made a part of the record.

Now Mr. Chairman, we would like to turn to the current programs and plans for the National Fire Academy, located at the National Emergency Training Center in Emmitsburg, Maryland.

The Federal government purchased the site for the now National Emergency Training Center in the Spring of 1979 and the first NFA classes were held in January 1980. This is a remarkable accomplishment when one realizes that the staff was able to develop curricula, hire faculty, provide student facilities and deliver advanced training programs without precedent in a few short months.

In just five years of operation at the Emmitsburg campus, over 30,000 students from every state in the Union have been trained in a variety of courses created to advance the professional development of fire service personnel and of other persons engaged in fire prevention and control activities. In these five years the NFA has gained a national reputation as an institution of excellence, whose courses are eagerly sought by students desirous of improving their abilities and enhancing their potential to impact on our Nation's fire problem. In addition to the "on campus" courses, over 90,000 students have attended courses developed by the NFA and delivered in every State throughout the country. These courses have been supplemented by courses where NFA trains state and local trainers who in turn take the courses and train their own local personnel. Over 40,000 state and local fire service personnel have been trained by these trainers since the program began in June of 1982. Another training opportunity, referred to as our "open learning" program, provides fire service personnel the opportunity to continue educational opportunities at the upper college level that can result in a baccalaureate degree in a fire service curriculum. 5000 students have availed themselves of this opportunity.

In Fiscal Year 1984, the Academy was responsible for the delivery of 1,841 course offerings to 56,324 students, generating 1,268,435 hours of training activity throughout the United States.

In our organization we have two units, our Resident Programs Division and our Field Programs Division. The Resident Programs Division in Fiscal Year 1984 was responsible for coordinating 163 individual on-campus and 23 off-campus offerings of 34 different programs for 10,635 participants and generating 401,012 student hours of activity. Our Field Programs Division was responsible for coordinating 1600 individual off-campus offerings and 55 on-campus offerings of 35 different programs for 45,689 participants generating 725,952 student hours of activity.

The cost of these programs are shared among the Federal government, state and local governments, the individual students and, in some cases, by the private sector.

The total Federal cost for this program in FY 1984 was $10,700,000. Our courses are continually updated with the infusion of new technology and information, and new courses are added each year to our curriculum. we are proud of our new Master Curriculum Plan which defines the field of firefighter safety and professional development from top to bottom. It is structured to allow fullest growth and learning potential at each level-Executive Fire Officer, Command and Staff, Fire Service Technical Specialist and Line Officer.

We are particularly proud of our Executive Development course, an intensive two-week program for top-level fire officers which provides opportunities to expand their managerial effectiveness. Although only offered for the last three years, graduates already have moved to the top fire service positions in Seattle, Houston, Fort Worth, Philadelphia, Chicago, Palm Beach, and other cities. We are also using the latest training techniques and technology to reach students across the nation. For example, through a teleconference network we presented a course on "The Use of Microcomputers in Fire Service Management" with over 4000 participants.

Because of our conviction that effective delivery of public services in an era of shrinking resources requires a conscious investment aimed at enhancing the quality of management in the public sector, the NFA and the USFA have entered into an agreement with Harvard University that permits five senior fire service executives to participate in the John F. Kennedy School of Government, at Harvard, each summer. This prestigious opportunity is another example of the emphasis we are placing on assisting the senior fire official to deal with the increasingly difficult task of delivery of an effective and efficient public service in a very competitive environment.

NFA courses are accredited through the American Council on Education and NFA credits can be transferred to a degree program.

We are most concerned with our inability to accept all student applications for course admission. Unfortunately, our facility is not large enough to accommodate all the qualified applicants we receive and we must operate on a "first come, first served" basis. In 1984, we have turned down 4,783 applicants. This year, for instance, in just two hazardous materials courses, over 700 qualified applicants have to be turned away. In the fire arson investigation course, which includes both law enforcement and fire personnel, nearly 400 applicants had to be rejected due to space limitations.

Because of our limited capability, the Congress has approved expanding development of our facility in a western campus in Carson city, Nevada. The opening of this new campus, now planned for mid-summer 1985, will compliment our existing campus in Emmitsburg, Maryland. The NETC site will continue to be the prime location for course development and the Executive Fire Officer and Command and Staff Programs that require the national perspective and interaction for which the Academy has become known.

We appear before this committee proud of our accomplishments and with a positive spirit in reporting this Administration's response to the mandates of the Federal Fire Prevention and Control Act. However, Mr. Chairman, we cannot delude you or the citizens of this country with the suggestion that the national fire problem has been solved. Although there has been a significant reduction in the number of fire deaths, the enormous losses are still unacceptable. These fire losses cannot be ignored by a Nation concerned for the welfare of its citizens. There is a great spirit of public service and dedication among the Nation's firefighters and the many citizens who dedicate their time, lives, and energies for the common good. We pledge our comprehensive and committed efforts to take positive actions that contribute towards a national goal to stop "America Burning".

We, therefore, respectfully request the authorization of appropriations in the amount of $19,322,000 for activities under the Federal Fire Prevention and Control Act of 1974. This authorization request is consistent with the President's budget and freezes most programs at the 1985 level. The authorization does provide for the opening of the new Carson City campus to assist in meeting the training needs of firefighters. It also provides for the continuation of all other programs.

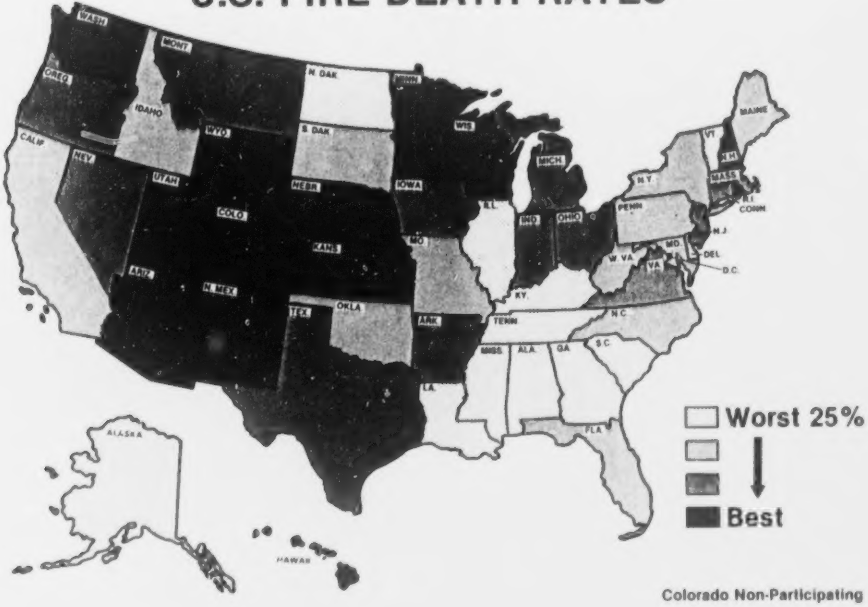
Mr. chairman, this concludes my statement. We will be happy to respond to any questions you or the other members of the Subcommittee may have.

The Fire Problems in the United States

Fires	2,300,000
Deaths	6,000
Injuries	135,000
Property loss	$6,600,000,000

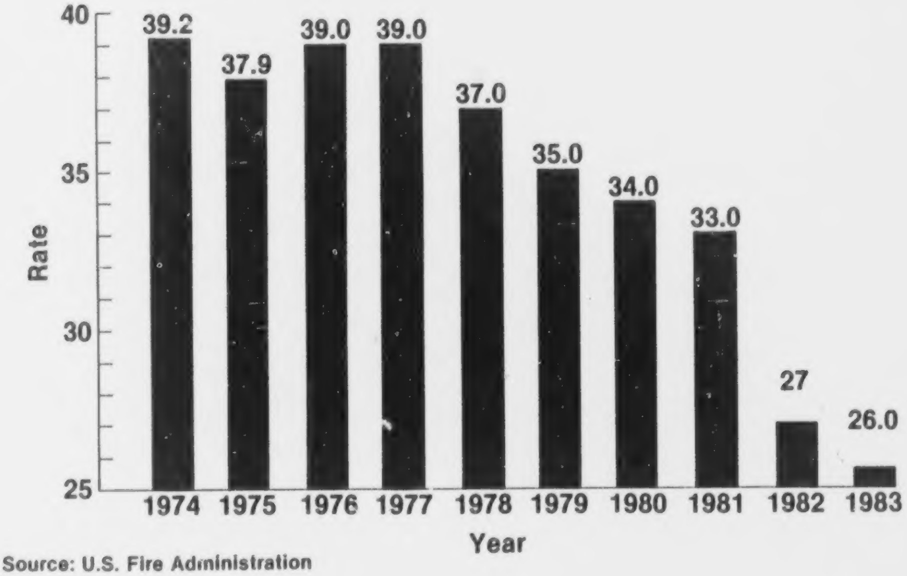
Source: NFPA estimates for 1983.

U.S. FIRE DEATH RATES



Colorado Non-Participating

U.S. FIRE DEATH RATES PER MILLION POPULATION



Source: U.S. Fire Administration

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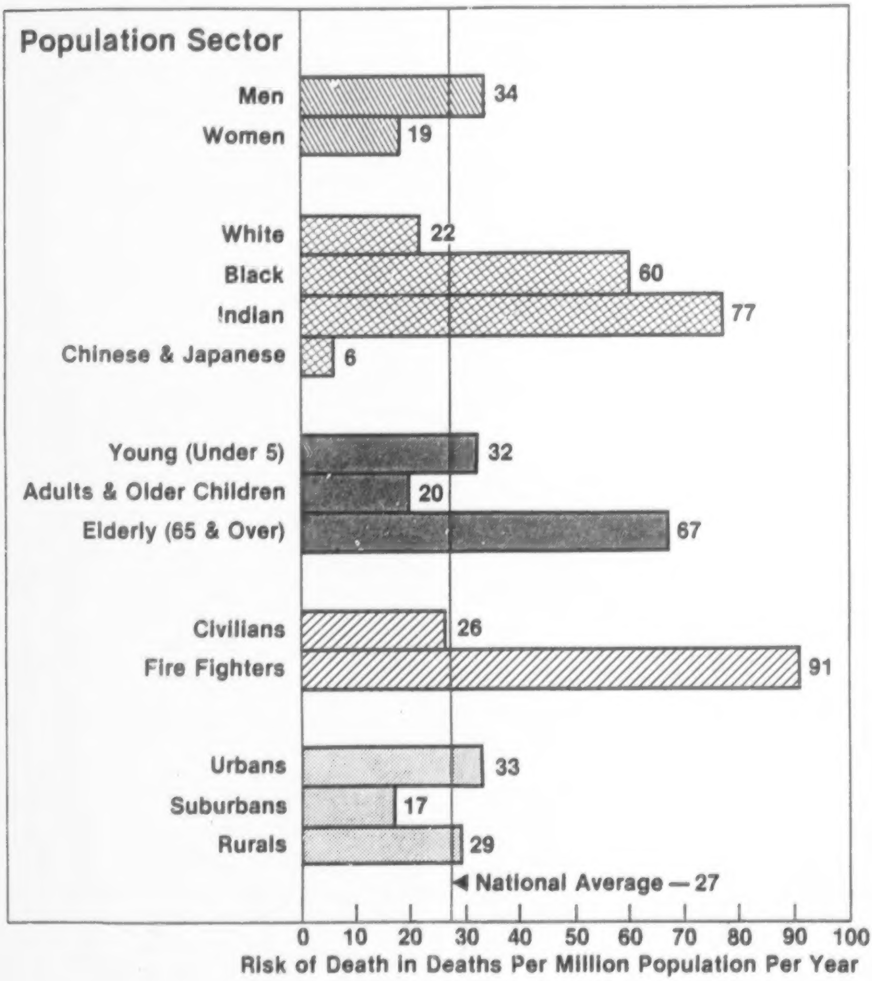
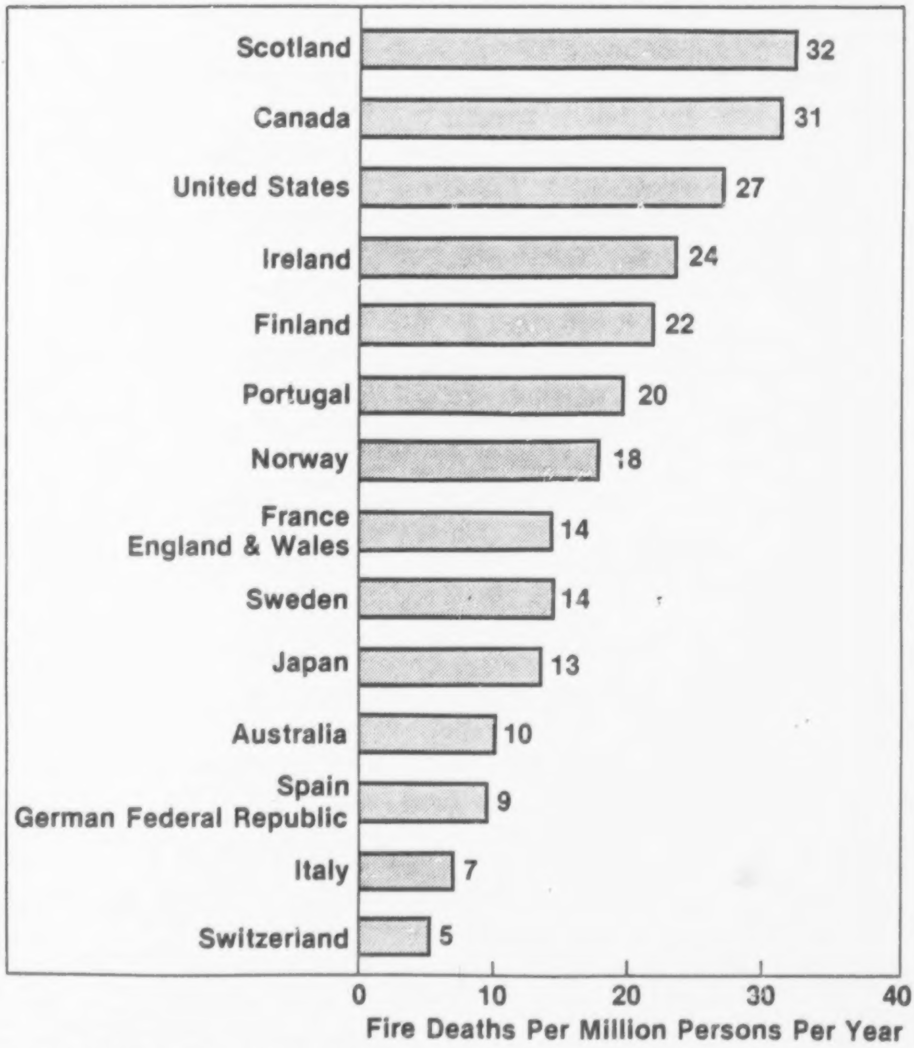
THE UNEVEN RISK OF DEATH BY FIRE



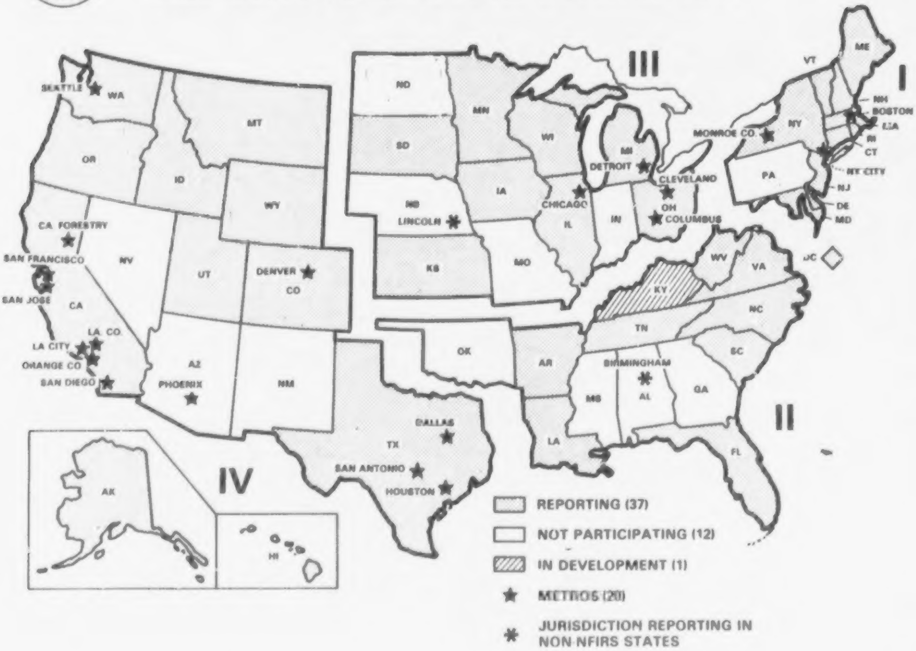
Source: U.S. Fire Administration 1983

FIRE DEATH RATES OF DEVELOPED NATIONS RISK OF DEATH BY FIRE —



Source: World Health Organization, 1982

NATIONAL FIRE INCIDENT REPORTING SYSTEM (NFIRS) 1985



USFA Overview Five Problem Areas

Residential fires;

F/F health and safety; fire service management efficiency; arson; and fire service multi-agency operations.

USFA INITIATIVES

Residential fire problems:

Community volunteer; residential sprinkler; data collection, analysis; data utilization; and public education and awareness.

Firefighter health and safety:

Equipment studies; training/awareness; health studies; safety studies; and data collection and analysis.

Management efficiency:

Leadership capacity building; data utilization; alternative fire service delivery; private sector initiatives; and public education and awareness.

Arson:

Community anti-arson; aims; data collection and analysis; juvenile firesetters; and public education and awareness.

Fire service multi-agency operations:

Regional operations; IEMS; data analysis and utilization; Federal/State agency coordination; and public education and awareness.

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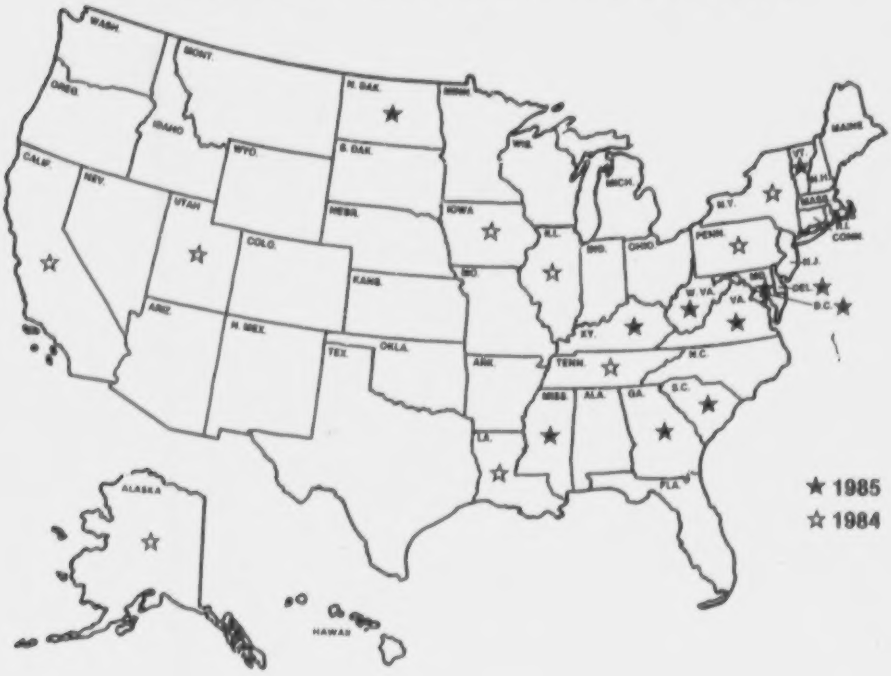
COMMUNITY-BASED PROGRAMS



FEMA—USFA: ANTI-ARSON CBO'S

New Britain, Conn., Orlando, Fla., Boston, Mass., Springfield, Mass., Holyoke, Mass., Brooklyn, N.Y. (2), Bronx, N.Y., New York, N.Y., Cleveland, Oh., Philadelphia, Penn., and Providence, R.I.

Senator GORTON. Perhaps we have not necessarily had all of the right people here to testify before us today, but we will submit written questions and we hope they will be answered by people who know what the answers are.

Thank you very much.

[The following information was subsequently received for the record:]

QUESTIONS OF THE MAJORITY AND THE ANSWERS THERETO

Question 1. What is the Fire Academy doing to encourage fire departments around the country to devote greater resources to fire prevention?

Answer. The National Fire Academy (NFA) has consistently supported the strategy identified in Public Law 93-498 to change the emphasis of the various fire communities to a proactive fire prevention methodology. The NFA has used a wide variety of tactics to implement this strategic goal while experiencing continual restraints on critical resources.

The NFA has conducted three national conferences which addressed public safety and burn prevention education issues: 1983—National Fire Safety Education Conference, 325 participants; 1984—National Fire Safety and Burn Prevention Conference, 760 participants; 1985—Partnerships Against Fire Conference, 595 participants.

Each of the four day conferences provided participants from local and state governments, school administrators and teachers, health and emergency medical care services professionals, private sector representatives, community volunteer organizations, and allied professional organizations along with fire service members, information on the latest techniques and technologies for educating the public and assisting in overcoming public indifference to fire and fire prevention.

Prior to 1983, annual fire safety conferences conducted by the U.S. Fire Administration reached no more than 150 participants. Both the number of participants and the scope increased dramatically after the NFA assumed project management responsibility for these conferences.

Early 1982 saw the accelerated development of two NFA field courses: Public Fire Education Planning and Conducting Basic Fire Prevention Inspections. These courses were field tested during 1982, and handed off to State fire service training systems and the Nation's largest fire departments during the 1983 Train-the-Trainer program. Instructors from the 50 States, the 112 largest fire departments and the military services have returned to their jurisdictions to teach these Academy-developed courses, and to train other instructors.

A majority of the Academy's field course development and delivery efforts for local and state level use is in courses with a fire prevention emphasis. The Academy fire prevention-related Field/Train-the-Trainer course offerings include:

Building Construction for Fire Suppression Forces: Principles.

Building Construction for Fire Suppression Forces: Noncombustible and Fire Resistive Construction.

Conducting Basic Fire Prevention Inspections (1983 Train-the-Trainer).

Fire Risk Analysis.

Community Fire Defense Planning.

Public Fire Education Planning (1983 Train-the-Trainer).

Volunteer Fire Service Management (1982 Train-the-Trainer).

The diverse nature of the American fire problem necessitated the targeting of additional specific audiences which have a critical role in fire prevention initiatives. These include:

The American Institute of Architects (AIA) and the Institute of Business Design (IBD) are cooperating with the NFA in the pilot deliveries of a three-part Fire Safety Building Design two day seminar series being conducted in FY 85. The program is designed to provide practicing architects and interior designers with basic fire safety information. By 1987, the NFA plans to make this material available to the Nation's architecture colleges and universities for integration into their curricula.

Between FY 82 and FY 85, the Academy will have conducted over 50 Juvenile Firesetter Counseling Workshops nationwide for fire service, criminal justice and social services personnel. These workshops are designed to provide participants with information on designing and managing effective local juvenile firesetter counseling programs. This effort puts into operation through training the research and development efforts of the U.S. Fire Administration in this critical area.

The NFA provides financial, technical and administrative support to the National Fire Protection Association for delivery of Learn Not to Burn and Firesafety for the Rest of Your life to elementary and secondary schools and mentally handicapped community residences through fire safety curricula training workshops. These workshops assist local fire departments and school systems in implementing tested, proven fire safety education programs in elementary and secondary schools. Since 1982 almost 250 workshops have been conducted annually in this program area alone.

In support of the U.S. Fire Administration's "Partnerships Against Fire" Community Fire Prevention program, the NFA offers a field short course on Community Fire Prevention Program Evaluation. This course will be offered in each of the 10 demonstration project states during FY 85, and offerings will increase as the U.S. Fire Administration's program is enlarged to include additional States and local communities.

The NFA has supported the Open Learning for the Fire Service Program through a network of eight public colleges and universities, where through correspondence and regular education methodologies students may take a total of 12 college level courses, nine of which stress fire prevention. Those courses are:

Advanced Fire Administration.

Analytic Approaches to Public Fire Protection.

Fire Prevention Organization and Management.

Fire-Related Human Behavior.
Political and Legal Foundations of Fire Protection.
Fire Protection Structure and Systems Design.
The Community and the Fire Threat.
Fire Dynamics.
Applications of Fire Research.

The NFA has capitalized on the opportunity presented through resident training of its students, both uniform and non-uniform fire service personnel and non-fire "service" personnel, to emphasize fire prevention.

The Public Fire Education Specialist course has graduated 1000 students over the past four years. These graduates have produced hundreds of fire safety education programs at the local level around the country.

The NFA advanced "Management of Fire Safety Education" course has led to many graduates conducting critical comprehensive research in effective fire safety education methodology.

In the two and a half years of this course's existence, the class has been taught to over 350 students from all across the country. Two examples of fire safety education these graduates are conducting are:

A. Inspector Anderson and Wally's Fourth Grade Fire Safety Analysis, Charlotte, N.C.

Anderson and Wally developed a "pre-test-post-test" to validate their fourth grade fire safety program. They tested 1,491 students using the research methodology they were taught in the NFA "Management of Fire Safety Education" course. They were able to prove the validity and reliability of their safety education programs.

B. Burn Foundation, Pre-School Fire/Burn Safety Program, Philadelphia, Pennsylvania, Kenneth Stewart, Director of Prevention.

Using methodologies he learned at NFA course, Mr. Stewart conducted a research project on the ability of 3, 4, and 5 year olds to learn fire safety. Over 200 preschoolers participated in the project. The results proved that significant knowledge gain can be made by children in this age group in the area of fire and burn safety.

The ED III course is the top fire service executive program in America. A major portion of this program deals with research conducted by the students on the fire problem. These papers make significant contributions to the technical literature. Most importantly, fire prevention has been addressed in 10 of these papers.

The NFA's Organizational Analysis and Renewal program is conducted with individual fire departments. Part of the program is the development of a strategic plan to help the department better service the community. Two of the four plans, developed to date, include major fire prevention goals.

The NFA has placed significant effort in fire prevention resident curriculum. These timely and important programs train all facets of professionals in fire prevention from new inspectors to managers of prevention systems. To date from fiscal year 1980, these four courses have trained 3092 students. These courses include:

Fire Prevention Specialist I.
Fire Prevention Specialist II.
Plans Review for Inspectors.
Managing the Codes Process.
Hazardous Substance Specialist (New in fiscal year 1985).

A new program is being developed called Management of Fire Prevention Programs and will be pilot tested in August of 1985. A new Executive Fire Officer Program called Strategic Analysis of Fire Prevention Programs is due for development in fiscal year 1986.

Finally, an indirect measure of the NFA's success in achieving strategic goals of fire prevention emphasis may be the fact that NFA faculty are nationally recognized experts in the fire prevention field. They are requested by diverse local, state and national audiences to lecture, write, answer inquiries and act as consultants on many topics including smoke detectors, fire safety education, code enforcement, sprinkler systems, arson and fire prevention management.

Question 2. What percentage of the students at the National Fire Academy have been women and minorities? Does this reflect the percentage of fire fighters? Is the academy encouraging the participation of women and minorities?

Answer. Thus far in fiscal year 1985, Resident Program attendance figures show that 86 women and 1993 men attended resident courses. Of the total attendees, 4 percent are women and 96 percent men. Minority attendance totaled 6 percent or 114 students.

The national percentage of women and minorities in the fire service is not accurately known, so no valid comparison can be drawn.

The National Fire Academy is open to all qualified applicants and allows local fire departments and organizations to set attendance policies within the local jurisdictions.

Question 3. Has the U.S.F.A. funded studies on how practices by the insurance industry could provide increased incentives for fire prevention? Has anyone else funded such studies?

Answer. The U.S.F.A. has not funded a specific study on how practices by the insurance industry could provide increased incentives for fire prevention nor are we aware of any such studies. However, the Fire Administration works on many projects with the insurance industry and through such programs as residential sprinklers, we hope to see such incentives. Currently the National Association of Home Builders is conducting a cost benefits analysis project for the U.S.F.A. using insurance incentives as one of the variables. Allstate insurance sponsored a demonstration of the U.S.F.A. residential sprinkler trailer in September at their annual employee day.

The community-base anti-arson grant program of U.S.F.A. has encouraged matching funds from insurance and private sector sponsors to develop such incentives for sprinkler systems and other fire prevention and anti-arson projects designed to preserve the nation's housing stock and, most importantly, save lives.

Question 4. Is a Federal role in promoting residential sprinklers still necessary? When do you expect private industry to take over?

Answer. The United States Fire Administration is mandated under Public Law 93-498, Section 8, Technology Development Program, to conduct a continuing program of development, testing and evaluation of systems and technologies in the area of in-place fire prevention systems, such as life saving sprinkler technology. USFA acts as a catalyst to make people and industry more aware of the value of such life protecting systems. We do not duplicate private sector interest or effort. Rather, we attempt to develop and stimulate their interest and effort. We fund research in areas that will lead to better design and to development of testing procedures for improved life safety codes and standards.

The USFA has targeted research and development in areas where there is no profit incentive for industry. The USFA sees itself as playing the honest broker role. We make every effort to bring private industry into the programs, encouraging their contributions in the development phase.

Industry should be responsible for marketing such systems after development, testing and evaluation. Industry is already moving ahead in the residential sprinkler area.

Question 5. What percentage of U.S. Fire Administration contracts have been awarded on a non-competitive basis in the last five years? In the last year?

Answer. Mr. Chairman, I would like to respond to this question by inserting the following chart showing USFA contracts over the past five years.

[Dollars amounts in millions]

	1981	1982	1983	1984	1985
Percent of competitive awards	(1)	(1)	0	25	45
Funding available for contracts/grants	(1)	(1), (2)	[3] $3.3	[4] $4.3	$8.2

[1] Data is not available.

[2] The Administration proposed to eliminate the USFA in this fiscal year, and the activity was geared toward closing out programs that had been continued from previous Administration projects.

[3] This was a transitional year when the Administration decided to continue the USFA and with reduced staff use of non-competitive awards was necessary to keep certain programs operating.

[4] This year was the first year where some advance planning was possible and the percentage of competitive awards reflects this.

Question 6. What organizations have received the largest amount of USFA contract money in the last five years? What percentage has gone to members of the Joint Council of National Fire Service Organizations?

Answer. Mr. Chairman, I would like to submit the attached chart detailing contracts and grants that have been awarded to fire service organizations.

FIRE SERVICE ORGANIZATION CONTRACTS/GRANTS [1]

	Fiscal years—			
	1982	1983	1984	1985
International Association of Fire Chiefs (IAFC)	$53,500	$363,556	$108,299	$310,000
International Association of Firefighters (IAFF)		735,130	843,532	720,000
International Society of Fire Service Instructors (ISFSI)	22,463	131,173	460,744	450,000
National Fire Protection Association (NFPA)	735,710	807,652	665,284	350,000
International Association of Arson Investigators	203,800	112,457	35,109	
Fire Marshals Association of America		9,990	50,000	
National Volunteer Fire Council			53,496	50,000
Total	1,015,473	2,159,958	2,216,464	1,880,000
Percentage of program funds	41	65	51	23
Academic institution contracts/grants:				
University of Maryland	$25,000	$25,620	$2,000	
University of Indiana		7,000	6,000	
Harvard University			41,000	$42,000
University of Washington				80,000

[1] Detail not available for fiscal year 1981.

Question 7. How much of the money in the National Community Volunteer Fire Prevention Program reached the communities and how much was used in the administration of the program? What services were provided? Who received the contract for the management of this program? Was this contract awarded on a competitive or non-competitive basis?

Answer. In FY 84, $1,000,000 was appropriated for the first year of this program. Of that amount, $700,000 was made directly available to the ten States selected to be the initial participants and to the three communities in each State selected to receive funding assistance. The funding was made available in accordance with the following policy:

a. to the State: $10,000 per state to assist in the organization of a State-level coordinating committee and other required functions;

b. to the Community Volunteer Organization (CVO): $60,000 for local projects in each state based upon the following formula; urban project—$25,000; suburban project—$25,000; and rural project—$10,000.

The remaining $300,000 of the funding was used for technical training and support.

In FY 85, Congress provided an additional $1,000,000 for this program, making a total of $2,000,000 available. This permitted the USFA to continue funding the initial 10 States and 30 projects and to add 10 more States, plus the District of Columbia.

Of the $2,000,000 appropriated in FY 85, $1.3 million will go directly to states and local communities. $275,000 will be used for public education and awareness efforts as well as to replicate existing community programs for utilization in other parts of the country.

Cooperative agreements for administrative services in conjunction with this program were awarded to two organizations—the International Society of Fire Service Instructors (ISFSI) and the National Governors Association's National Criminal Justice Association. These were non-competitive awards in FY 84 and FY 85.

In FY 84, administrative services by these two organizations totaled $270,352, or 27% of the total. In FY 85, administrative services by these two organizations will total $425,000 or 21% of the total.

Services provided include:

Responsibility for coordinating state activities within the States.

Development of materials, planning, organizing and implementing a two day orientation seminar for the States' Governors' representatives.

Development and update of materials, planning and implementing three day seminars for the selected local community organizations to help them most effectively initiate local fire safety efforts.

Ongoing assistance and technical support services to each of the states.

Assistance in organizing state based volunteer advisory committee, specifically in encouraging broader private sector involvement.

Questions of the Minority and the Answers Thereto

Question 1. Do you believe it's important to keep U.S.F.A. a separate and distinct element of FEMA?

Answer. The USFA is a discrete operating unit within FEMA. The Administrator of the USFA is an Executive Level IV, on the same level as the Associate Directors of FEMA. The budget and program plan for USFA is a separate and distinct function within FEMA and it is planned to remain so.

Question 2. In a disaster-oriented agency such as FEMA, do you believe there is a danger of decreased emphasis on "small fire" prevention and control?

Answer. FEMA policy on disaster is built around the IEMS concept of preparedness for all disasters. The USFA is recognized as the Federal fire focus and its mission is to develop solutions to the fire problem through collection and dissemination of data, public awareness, firefighter health and safety, fire prevention and arson control and fire policy and management improvements. This mission has been supported and assisted by a close association with various units of the parent organization.

At the local level, a large percentage of the emergency response directors are the fire chiefs, thereby linking the fire services with the total response planning and operations across disasters.

Question 3. According to a recent CRS study, there has been criticism of the U.S.F.A. as being mainly directed toward fire suppression rather than prevention. Do you agree?

Answer. I do not agree that USFA's program effort is mainly directed toward suppression rather than prevention. In a review of programs and projects of the USFA over the recent year, I found few major projects that were directed toward what the fire service would consider suppression. The project on residential quick acting sprinkler systems is not considered by the fire service as fire suppression; it is rather built-in fire protection and, along with smoke detectors, considered a life protection system.

A review of the four USFA program focuses specified by Congress, indicates that the goals of the USFA are fire prevention and education, rather than suppression.

Question 4. How would the termination of the Center for Fire Research affect the activities of the U.S. Fire Administration?

Answer. The Center for Fire Research is highly regarded by the working fire service. They perform research in areas that the private sector either does not wish to involve themselves in or where other interests may cause a conflict. The Center for Fire Research's work is long range in nature and this makes measurement of its immediate effects on USFA program activities difficult to assess.

Basic research by CFR has led to specific program directions of the USFA in some cases, i.e., smoke detectors, residential sprinklers and the fire safe cigarette.

Question 5. According to a recent CRS study, there has been criticism that U.S.F.A. is primarily oriented toward the fire service, rather than the citizenry as a whole. Do you believe this is a problem?

Answer. A review of Public Law 93-498 indicates the areas in which the Administrator of the Fire Administration shall focus the Administration's efforts: public education; fire technology, to include but not limited to, protective clothing, breathing apparatus, in-place fire prevention equipment, operations, test, demonstrations and investigation in support of those activities. The Administration also engages in fire service management studies, collection, analysis and dissemination of data, code review and other prevention and arson control activities.

Because fire control is a local issue and, I might add, a complicated issue, we can best serve the citizenry by acting as a catalyst, providing information and assistance to build capacity at the state and local level.

A review of the mandate of the Public Law and the accomplishments and 5-year plan of the Fire Administration will show that we are on track. Since the inception of the USFA, the number of citizens killed by fire has dropped from 9,000+ to something less than 6,000. This is service to the citizenry.

Question 6. Why does America maintain its poor fire record in comparison with the rest of the world?

Answer. Fire loss is a complicated problem. It is not just a fire problem; it is a social, economic, cultural and demographic problem. With the limited resources available to USFA, we cannot hope to resolve all facets of the problem. The European and Asian fire picture is also colored by these same factors. However, it is safe to say the other cultures will accept a much greater level of governmental control into their lives, homes and businesses, making it easier to initiate and enforce fire safety practices.

Question 7. In your opinion, is the proposed FY86 budget sufficient for the U.S.F.A. and the Academy to carry out its statutory responsibilities?

Answer. Given the curent number of employees authorized the USFA, the program budget is sufficient to carry out the planned FY86 program. The proposed elimination of stipends would not affect the National Fire Academy's ability to carry out its planned FY86 program.

Question 8. Is the U.S.F.A. planning on eliminating any regional offices? If so, which ones?

Answer. The USFA does not operate regional offices.

Question 9. It is my understanding that NETC-West will be running by June of this year. Will there be additional money and staff requested for NETC-West?

Answer. The USFA is not involved in any NETC-West activity.

Senator GORTON. Now, Mr. Philip Schaenman. You are welcome, sir, and your entire written statement will be included in the record as if read, and you may proceed.

STATEMENT OF PHILIP S. SCHAENMAN, PRESIDENT, TRI DATA CORPORATION

Mr. SCHAENMAN. Hello, Senator Gorton. As you noted in your opening remarks, we continue to have a fire death rate that is much higher than the rest of the world and not by a small amount, but by 50 to 200 percent higher than most other major countries.

I will give a brief summary of our studies on how the United States compares to other countries in fire safety and the implications for improving our programs. These studies were started at the Fire Administration and were continued with the aid of grants from the Tobacco Institute's Fire Prevention Program.

The situation would be even worse today if it were not for our technology. We make the most extensive use of smoke detectors in the world. We have increased the number of buildings with sprinkler systems. We have a superb fire service that is deployed within shorter distances of the average home than in Europe or Asia. And we have to ask the question: Why are so many dying here?

And the answer is not simple. There are many causes of fires, and many ways people live, and many successful approaches to the problem. And as Ed Wall was saying, each nation tunes its program to its own peoples. Many have less problem than we do because they have fewer kinds of peoples. We may have to tune ours to all of our different peoples in individual places.

Overall, the most glaring gap, where we seem to be behind the rest of the world, is in the public awareness of the hazards of fire. And as a result, people in other countries are more careful than we are when it comes to fire safety.

Now, it is tempting to attribute the differences to their living conditions or their cultures or legal differences, and they do play a role. But when you probe beneath the surface, the overwhelming feature of fire protection in other countries is how much harder they work at prevention than we do.

The Fire Administration has made an impact on prevention practices in this country, even with its scant resources. But compared to other nations, we still only put a drop in the prevention bucket at Federal, State, and local levels.

Let's look at some examples of how Japan practices fire prevention. Most schools in Japan comply voluntarily with their national policy to teach fire prevention to children in the fourth grade.

Many school systems repeat the lessons in junior high. It is the leadership of their national fire agency that made this happen.

Fire officers in Japan are motivated to practice prevention by the training they receive when they are first promoted to officer. Most of our officers have no required training and instead they learn on the job. Only a fraction of our prevention officers, let alone all officers, get to go to the National Fire Academy of its outreach programs.

Fire departments in Japan send a public relations car to the scene of every working fire to tell the crowd that gathers what the cause of the fire was and to serve as a point of contact for the press. Senator Gore, as a working reporter, might have been interested in an article in one of this month's issues of one of the major fire magazines that encourages not reporting the cause of fire to the press.

Senator GORTON. What was the rationale?

Mr. SCHAENMAN. That there is liability and that you may be wrong, and those certainly are—that certainly is true in many cases. You have to be somewhat cautious, and you can't have just anyone on the scene reporting, but there is an awful lot of times when you do know the cause and you should be encouraged to report, in my opinion. That's putting a spotlight on the problems that people can prevent, and can increase their awareness of the problem, which we do for traffic safety by the way, and we tend not to do for fire safety.

TV and radio stations in Japan broadcast fire prevention spots in prime time. Their national fire agency and even local departments have their own regular time slots for live broadcast. Fire departments in Japan often visit individual homes on a regular basis, and the admission to the home is voluntary, and they often get in.

The Japanese copied our Fire Prevention Week in the fall, but they added two additional weeks in the spring. There is much more I could tell.

None of these are pilot programs. They reach nearly every citizen over and over. So it is no wonder that they have higher fire safety awareness than we do and their fire protection does not cost more than ours. Rather, they spend a larger share of their resources on prevention.

For example, instead of having 5 percent of firefighters assigned full time to prevention as we do, they have 15 percent which triples the effort. There are some conclusions here we could draw for our national fire program.

First, the U.S. Fire Administration should increase its leadership in fire prevention. It has been a leader, and it should encourage stronger local and State fire prevention efforts. This is the single most important action we can recommend to reduce the international gap in this decade.

The National Fire Academy should be strengthened to get more officers to attend the academy prevention courses. Canceling the stipend program, as proposed in the budget, would be going in just the wrong direction, especially for the volunteers.

The Center for Fire Research at the National Bureau of Standards which had its hearing this morning, needs support to help advance the technology that saves us from our failings. We cannot get everyone to be careful all the time. Our technology gives us a buffer to be human. The Center's research also can provide the hard facts for advising people on the best strategy for surviving the fire. The Fire Administration needs more specific information on the public's awareness of fire and how that awareness is formed.

For example, we need to know more about the extent and effectiveness of public educational programs in schools and fire departments and the role the media is playing in shaping the attitudes about fire safety as they do about crime. We have learned a great deal about the fire problem through the development of the National Fire Incident Reporting System. It needs to remain strong.

My former data shop has half the budget, one-fifth the people, and yet a larger number of participating cities to serve the needs. And these just are not adequate resources to do the job.

I believe the Fire Administration has had a significant impact on the fire problem. While most of the work on fire protection must take place at the local level, nations as diverse as France and Japan have strong Federal fire organizations that provide leadership, data, and research and training, and we need the same strong Federal effort if we are to be as successful as they are in keeping people from suffering the enormous personal and economic losses that we have today from fire.

I would be glad to answer any questions.

Senator GORTON. Thank you very much. We really do appreciate your help.

As you look at the methods of these other countries used to enhance public education, which do you believe can be transferred here? You have certainly expressed some reservations about that Japanese technique on the scene. And do we need further research to determine which of those we should experiment with in this country?

Mr. SCHAENMAN. I think there is a double question there. First, many of the techniques that are being used around the rest of the world are transferrable here to the same extent that programs are transferrable from Seattle to Austin. I mean there are always problems in just picking up something in one place and plunking it down in another.

The main characteristic is that they keep hitting the problem over and over and over again many different ways, the way we sell products. I mean they tune their ads to the different publics that they are reaching, and they happen to be fire ads. Using TV and radio to get to the people is not exotic technology. Passing out literature to every home is not exotic. We are doing all of the things they are doing somewhere in the United States. We are just not reaching 95 percent of the people, 99 percent of the people, as they are.

One of the problems is that the Fire Administration has never had the resources to really go out and spread it broadly. So there are some programs that are somewhat exotic, that are peculiar to particular nationalities, but I think in general, it is hitting people over and over by whatever mechanism you can get to them, with messages tailored to the particular groups.

The other question you asked, I forgot. I am sorry.

Senator GORTON. Whether or not we need more research on these techniques, on transferring techniques.

Mr. SCHAENMAN. Yes. I think we do. Amazingly, we have done very little research in this country on how public attitudes are formed in fire safety. We have lots of research on crime safety. Almost every university in the country has a sociology professor who studies attitudes about crime and perceptions of crime. There is almost no one who studies that for fire.

There is almost no research on what is the public awareness of fire and how has it gotten there. And I think if you ask any fire officer worth his salt, and there are a lot here in the room today, and they will have very strong opinions on how to reach people. I mean we know a lot about how to do that, but we cannot say quantitatively to you what percent of the school kids in the country are getting a good fire safety lesson.

Are they effective? We cannot say how many times fire is reported in the press. Is the cause reported, and does that have any bearing on the problem? What impact does TV and movie portrayals of the fire problem have?

So there are a lot of fundamental questions that I think we do not know about how the public attitude is being shaped that I think we need for knowing which direction to lead.

Senator GORTON. What is the most important single step we in Congress could take to stimulate increased fire safety?

Mr. SCHAENMAN. I think you are doing part of it by bringing more public awareness to the problem. Most people—and I would bet most Members of Congress who have not been party to these kinds of hearings—do not know that the United States has the highest fire death rate in the world. That is a big surprise to a lot of people.

Nobody is surprised we have a high crime rate. So it is news. And people have to have the awareness that there is this major problem, that it is costing big bucks, that it is killing and injuring a lot of people, and that awareness has to be raised. That is certainly something Congress is good at doing.

And I think the other thing is giving a strong backbone to the effort to push the prevention programs.

Senator GORTON. You have emphasized that many other countries lead us in fire prevention. Do they also lead us in other areas like firefighters' health and safety?

Mr. SCHAENMAN. I think we also have one of the highest firefighter death and injury rates in the world. The Japanese firefighter has one-tenth the chance of getting injured or killed on the job as an American firefighter. Now, the biggest reason is that he goes to one-tenth as many fires. They have a lot less exposure. So the prevention of fires is one of the big methods for reducing the exposure.

But in addition to that, they do have some very strong firefighter health and safety programs that we would like to have as vigorously as they do, but we do not yet.

Senator GORTON. So we can learn from them.

Mr. SCHAENMAN. I think we can learn in that area also. Yes.

Senator GORTON. In your written statement, you concluded that the U.S. Fire Administration should increase its leadership in fire prevention activities. Specifically, how could and should it do so?

Mr. SCHAENMAN. One way is again by raising the awareness level, particularly by the leadership, as it has been doing, at the State and local level of encouraging the fire service to increase its prevention efforts. That is probably the single most important role in my opinion, which has been going on since the Fire Administration was created and it has been hampered by the low internal manpower, particularly most recently.

But getting the State and local governments to understand how they can lead in prevention at the local level—I mean, pronouncements from on high are going to do just a certain amount of good. Most of the problem really does have to be done at the State and local level. But we can help educate the Fire Service how to do that job.

Senator GORTON. Mr. Schaenman, I really do want to thank you again for being of great help to us.

[The statement follows:]

STATEMENT OF PHILIP S. SCHAENMAN, TRIDATA CORP.

My name is Philip S. Schaenman. I was an Associate Administrator of the U.S. Fire Administration from 1976–1981, and was responsible for the data and technology programs. I am now President of TriData Corporation, which specializes in research on fire protection issues.

As the Committee requested, I will give a brief summary of our studies on how the United States compares to other countries in fire protection, and the implications for improving the U.S. fire program. These studies were started at the Fire Administration, and were continued with the aid of grants from The Tobacco Institute's fire prevention program. Copies of our just published study on the Far East and our earliest report on Europe have been provided to the Committee.[1]

The United States and Canada continue to have the dubious distinction of having the highest fire death rates and some of the highest building fire rates in the world. This was the case 10 years ago when "America Burning" was written. It is still the case even though the death rate has gone down signficiantly since the Fire Administration was created. We have improved, but we are still much worse than the rest of the world.

The U.S. fire death rate is 50–200 percent higher than nations in Europe such as Britain, France, and Switzerland, and nations in the Far East such as Japan, Hong Kong, and Australia. We are even higher than most underdeveloped countries, according to World Health Organization data.

The situation would be much worse today if it weren't for our advancing fire technology. We make the mot extensive use of smoke detectors in the world, and they have saved many lives. We have an increasing number of buildings with sprinkler systems, and they work. If residential sprinkler systems go into wide use, the impact could be even greater.

We also have superb fire service that is generally well-equipped, and they are deployed within shorter distances of the average home than is the case in Europe or Asia.

Then why the big difference between us and other nations? What special conditions do they have that we do not? What can we learn from their approaches to fire?

The answers are not simple. There are many causes of fires, many ways people live, and many successful approaches to the fire problem. There is no panacea, no one solution.

But the glaring gap, where we seem to be way behind the rest of the world, is in public awareness of fire safety. I have attached a figure to my testimony which presents this assessment of where we stand on different aspects of fire protection in somewhat more detail.

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[1] Philip S. Schaenman, *International Concepts in Fire Protection—Ideas from Europe that Could Improve U.S. Fire Safety,* TriData Corporation, Arlington, Virginia, December 1982, and Philip S. Schaenman and Edward F. Seits, *International Concepts in Fire Protection—Practices from Japan, Hong Kong, Australia, and New Zealand,* TriData Corporation, Arlington, Virginia, February 1985.

People in other countries are far more careful than we are when it comes to fire safety. They have much the same kinds of fires we do, but far fewer of them. As you know it is not the few big fires but the very large number of residential fires we have that does us in.

It is tempting to attribute the differences in fire safety awareness among nations to their differences in living conditions or culture. But when you probe beneath the surface, this is not so clear.

The Japanese live in wood and paper houses that are huddled together on the narrowest of streets. In Hong Kong, most people live in concrete highrises, except for several thousand squatters in shacks and people on junks. In New Zealand, they live in wood frame detached homes that are well-separated. In Switzerland, there are sturdy multistory townhouses and wooden chalets. We have double or triple all of their fire death rates.

APPROACHES TO FIRE PROTECTION

Automatic detection and suppression: residences, commercial buildings	U.S. the leader.[1]
Fire department suppression: response time, apparatus, first alarm manning levels	U.S. one of leaders.[2]
Consumer product safety: ignition sources, fire-resistant materials	U.S. one of leaders.[2]
Building construction: compartmentation, smoke control, fire resistant construction, good exiting.	U.S. above average.[2]
Citizen extinguishment of incipient fires: fire extinguishers, hose reels	U.S. average—below average.[3]
Fire loading and toxicity: amount and type of furnishings	U.S. worse than average.[3]
Public awareness: attitudes, education, carefulness	U.S. far below world average.[4]

[1] Far above average.
[2] Above average.
[3] Below average.
[4] Far below average.

Sometimes the history of major fires is cited to for explaining our differences. Virtually every city in Europe and Japan burned down repeatedly in the Middle Ages. But we have had our share of large fires, too. In 1835 the largest fire in the English-speaking world since the Middle Ages was not in Europe but in New York City. Few Americans know that, including New Yorkers. Chicago, Boston, San Francisco, Atlanta, and many other U.S. cities have burned in the last 150 years, with little impact on our psyche other than some humorous references to a cow kicking over a lantern. Why have our major fires not led to the same public concern as the great fires of Europe and Japan have produced? Because we do not drive home the lesson.

The overwhelming feature of fire protection in other countries is how much harder they work at fire prevention than we do. The U.S. Fire Administration was given a charter by the Fire Prevention and Control Act to emphasize prevention. It has made an impact even with scant resources. There are new networks of public educators, new education materials, and public education programs such as on smoke detectors, and juvenile firesetters that did not exist before or were not widely practiced. Within the fire service, fire prevention is more respectable than it used to be. But compared to other nations we still put only a drop in the prevention bucket at local, state, and federal levels, in schools, in the insurance industry, and overall. I also believe we probably could get better leverage from the money we do spend.

Let's look at some examples of how Japan practices fire prevention.

In schools, it is national policy in Japan to teach fire prevention to children in the 4th grade, when they are 10 years old and forming their values. They teach the children that firesetters are bad guys and should be turned in, as well as teaching the basic of fire prevention. They also teach how to extinguish small fires. Many school systems repeat the lessons on a more sophisticated level in junior high school. The Japanese national fire agency encourages the schools to follow the national policy, and most do, though compliance at the local level is voluntary. (In the U.S. we do not even know how many school systems teach fire educaion—whether it is 10 percent or 90—percent—or what the quality is.)

Fire service officers in Japan are highly motivated to lead their communities in the practice of fire safety. The Japanese officers receive training in prevention as part of their mandatory officer courses. Most of our officers receive no mandatory officer training, though New York State is starting next week the first statewide mandatory training program for newly promoted fire officers. Learning for most U.S. fire officers, however, will continue to be mostly on the job. The National Fire Academy has good prevention courses, but only a fraction of prevention officers, let alone all officers, get to go to the academy or to attend its outreach programs. Officer training is crucial in setting attitudes about prevention in the fire service, and must be encouraged.

Fire departments in Japan send a public relations car to the scene of every working fire. A trained officer—often a woman—tells the crowd that gathers what the cause of the fire was. The PR officer also is the point of contact for the press; and the press is encouraged to report the exact cause. We often train PR people to report the cause as "undetermined," because of an incorrect perception of the legal liability involved in reporting the cause of fires.

Fire departments in Japan go to great lengths to assist the media when they are reporting fires. Large departments provide the press with phones in their dispatch centers. Tokyo flies over fires with a helicopter that broadcasts live TV.

TV and radio stations in Japan broadcast fire prevention spots in prime time. In Osaka there are live radio reports twice a day from fire headquarters. The Japanese Fire Defense Agency—their USFA—produces a five minute national TV fire prevention program twice a week at 10 a.m. and noon.

Fire departments in Japan often visit individual homes on a regular cycle. In Kyoto, for instance, they try to visit each home once every three years. Fire stations there have red motorbikes which a line firefighter from each company uses to go door to door for two hours every day.

The Japanese Fire Prevention Week in the fall was copied from ours. But they have added two additional full weeks of fire prevention in the spring.

None of these practices are "pilot" or "demonstration" programs. They reach nearly every citizen over and over. Perhaps most importantly, these prevention programs instill a sense of responsibility in the citizens of Japan. Causing a serious fire there is like causing a serious traffic accident here. This attitude is reinforced by legal penalties. It is no wonder the Japanese people have higher fire safety awareness than we do.

And their fire protection does not cost more than ours. Rather, they spend a larger share of their resources on prevention. Not a radical shift, but instead of having 5 percent of firefighters assigned full-time to prevention and 95 percent to suppression, as we do, they have 15 percent on prevention and 85 percent assigned to suppression. That means a 10 percent lower effort for suppression, but a 200 percent increase in the effort for prevention. And suppression is not hurt much because all of the prevention force can assist in suppression when necessary.

While there are problems in transferring programs from one community to another let alone one nation to another, most of the practices I observed seem transferable. Ask Commissioner Galante in Chicago; he has already launched an ambitious prevention education program that has been stimulated in part by some of the Japanese concepts.

There are some conclusions here we can draw for our national fire program.

(1) First, the U.S. Fire Administration should continue, and increase, its leadership in fire prevention to encourage stronger local and state prevention efforts. This is the single most important action we can recommend to reduce the international gap in this decade.

(2) The National Fire Academy should be strengthened to get more officers and prevention specialists to attend the Academy prevention courses. Cancelling the stipend program, as has been suggested in the proposed budget, would be going in just the wrong direction, especially for volunteers. The Fire Academy should include in its program the study of practices from other nations. They come here and pick our brains. In Kyoto, Auckland, and Hong Kong we found fire protection practices that originated in the United States. It is high time that we, too, started taking advantage of the world's pool of ideas.

(3) The Center for Fire Research at the National Bureau of Standards needs to be strongly supported to help advance the technology that saves us from our failings in carefulness and allows us to build a more firesafe environment at tolerable costs. We can do much more to get the public to be more careful, but we cannot get everyone to be careful all the time. Our technology gives us a buffer to be human. The Center must therefore be preserved as a key link in our national fire program.

(4) The Fire Administration needs more specific information on the public's awareness of fire to help direct its efforts most effectively. We do not know where we stand today nationally on prevention programs and their effectiveness. We need to know the extent and nature of fire department public education programs in use nationally. We need to know the percent of school systems that include fire safety in the curriculum, and whether their content is effective. We need information on how the public's attitude and knowledge about fire safety are developed, and what the leverage points are. For example, what role are newspapers and TV programs

and other media playing in shaping attitudes about fire safety, as they have for crime. This information would be useful to private industry fire safety programs as well.

(5) The Fire Administration should call upon industry to do its part in fire safety, especially the insurance industry. The insurance industry reports major financial set backs because of the gap between premiums received and payouts for losses, but has not begun to use the new fire information available to develop prevention programs that could reduce these losses. Further, in many countries the insurance industry has adopted a policy of not paying for a building that burns down unless a similar building is built on the same spot. That is a powerful disincentive for arson. We might consider that, too.

(6) We have learned a great deal about the fire problem in the U.S. through the development of the National Fire Incident Reporting System (NFIRS). It provides data for targeting prevention and for other management decisions in thousands of fire departments today. It needs to remain strong and continue to accept additional fire departments.

The national fire data need to be analyzed and displayed as models for state and local fire agencies, as well as to be benchmarks for local departments to compare themselves against.

Key findings need to be followed up to find out the why's behind the data. For example, when Pittsburgh and Philadelphia show up high in fire death rates, as they did in our international comparison of cities, we need to know why. When Illinois suddenly joins the southeastern states in high fire death rate, we need to know why.

My former data shop has half the budget and one fifth the personnel it used to have, yet faces a larger number of communities participating in the data system. These are not adequate resources for the job.

From the positions I've held both within and outside the Fire Administration, I believe that it has had a significant impact while operating on a tiny budget as Federal agency budgets go, a budget that is a fraction of that asked for by the bipartisan commission that led to its formation.

Other countries realize that one of the main reasons for civilization is the mutual defense against threats such as fire. While most of the fight is at the local level, nations as diverse as France and Japan have strong federal fire organizations that provide leadership, data, research, and training. We need to have the same if we are to be as successful as they are in keeping people from suffering the enormous personal and economic losses we have today from fire.

Senator GORTON. Now Mr. Boyd, Mr. Gerard, and Mr. Diezel.

Mr. Boyd, we will hear from you. We do have written statements from the other witnesses which will be included in the record. You may proceed.

STATEMENTS OF HOWARD BOYD, CHAIRMAN, JOINT COUNCIL OF NATIONAL FIRE SERVICE ORGANIZATIONS; JACK GERARD, NATIONAL FIRE PREVENTION ASSOCIATION; AND HARRY E. DIEZEL, INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

Mr. BOYD. Thank you, Senator. I am very grateful for the opportunity of being here. And this is, I suppose, a rather delicate subject, but I understand we are very grateful to the State of Washington for the interest that has been shown in fire safety. Your predecessor, as I understand that you defeated, Senator Warren Magnuson, did a tremendous amount in the field of fire safety in America and we are grateful that you are following and that you are continuing in this line.

As President of the Fire Marshalls Association of North America, I had the opportunity a number of years ago here in Washington of presenting Senator Magnuson with the Percy-Bookby Award which is a silver trumpet, and is the highest award that the Fire Marshalls Association of North America has presented, and it has only been given on three occasions in 100 years.

So I think that speaks very highly of what we thought of Senator Magnuson, and thank you so much.

It is indeed a pleasure to submit testimony to support the reauthorization of the United States Fire Administration and the National Fire Academy within the Federal Emergency Management Agency and the Center for Fire Research.

This testimony is presented on behalf of the 11 organizations of the joint council as listed herein: That is, the Fire Marshalls Association, the International Association of Arson Investigators, the International Association of Fire Chiefs, the International Association of Firefighters, the International Fire Service Training Association; the International Municipal Signal Association; the International Society of Fire Service Instructors; the Metro Chiefs of the International Association of Fire Chiefs; the International Association of Black Professional Firefighters; the National Fire Protection Association; and the National Volunteer Fire Council.

We feel that the programs of the U.S. Fire Administration and the National Fire Academy and the Center for Fire Research are vital to this Nation. These programs have gone a long way in addressing the recommendations of "America Burning," the official report of the National Fire Prevention and Control Commission.

To reduce any efforts at this time would have a significant impact on the progress to date. I will not present to you as part of this testimony the facts and figures about life loss, property loss, or the magnitude of the injury problem caused by fire.

These statistics have been or can be presented at various hearings, or covered in the written testimony that is presented by other members of the joint council and are available to you. These statistics represent the past.

Instead, this testimony will reflect the present and the future.

The United States Fire Administration, within the Federal Emergency Management Agency, is divided into four offices: Fire Policy and Coordination; Firefighter Health and Safety; Fire Prevention and Arson Control; and Fire Data and Analysis. The Government Affairs Committee of the joint council has worked very closely with the U.S. Fire Administation to establish priorities for each of these program areas and to help guide the allocation of resources toward the primary mission of improving fire safety in the United States.

While the major thrust of the joint council's efforts during the most recent past have been devoted toward helping to reestablish the program priorities for the United States Fire Administration, the working relationship with the National Fire Academy has continued.

Staistics for the National Fire Academy will not be presented as part of this testimony. They, too, are available to your committee if desired. However, note should be made that the successful delivery of quality courses, both on campus and in the field, is causing a major admissions problem resulting in a large majority of the applications received being rejected because classes are filling up nearly a year in advance.

While the fire programs of the U.S. Fire Administration and the National Fire Academy are both effective and cost-effective, they still lack the personnel and financial resources necessary to meet the needs of the Fire Service and to make the desired impact on the Nation's fire problem.

The joint council is also aware of the important work being conducted by the Center for Fire Research at the National Bureau of Standards, and supports the position that the Center for Fire Research of the National Bureau of Standards be authorized and level funded within the Department of Commerce for the fiscal year 1986, so long as the funding in no way reduces the recommended funding of any other federally funded fire program.

While the joint council of national fire service organizations recognizes the spirit of the President and Congress as it relates to freezes and reductions, they feel that the Fire Service has practiced austerity since the inception of the Federal fire focus. And in fact, I believe if you look back at the record, you will find that it has been underfunded ever since it was founded.

The Fire Service has practiced this austerity, and therefore the joint council recommends for fiscal year 1986 and 1987 authorizations for the United States Fire Administration of the fiscal year 1986 of $12 million with 30 FTE's, and the fiscal year 1987 of $15 million with 40 FTE's; the National Fire Academy, the fiscal year of 1986, with $16,500,000 and 100 FTE's, and the fiscal year 1987 of $20 million with 120 FTE's.

In addition, we request the committee authorizations to include the student stipend program at the National Fire Academy be authorized at 100 percent. The request authorization for the Center for Fire Research we suggest should be the fiscal year 1986 at $8 million with 40 FTE's, and the fiscal year 1987 at $10 million with 50 FTE's.

So, on behalf of the joint council, I thank you for the opportunity to present this testimony.

Senator **Gorton**. Mr. Boyd, we thank you for your eloquent testimony.

Based on your position as Chairman of the Joint Council and your many years of experience as a fire marshall in Tennessee, how would you prioritize the important target areas for reducing deaths from fires among public education and residential sprinklers, toxicity of building materials, and other factors? How would you rank them?

Mr. **Boyd**. I would rank the preservation of life in America—and we are not thinking about property, but life in America. And I think that public education, making the public aware of the cause, prevention and the efforts in prevention, whatever prevention may be, and it carries such a broad spectrum, and the new residential sprinkler program, I believe that combining those two, we could probably do more to reduce the incident of loss of life.

We could improve this. We could save more lives than any other one method. A number of years ago, the Triangle Institute in North Carolina did a study that was widely published. It was a combination of a study through NFPA and through the City Managers Association in which they found that fire prevention—and that covers that broad spectrum of whatever it may include and whatever it may be—is ten times as effective as fire suppression.

Now, don't misunderstand, sir. We are always going to need people to suppress fires that accidentally occur, that occur when the prevention breaks down. But I believe that those would probably be the two most cost-effective methods that we can utilize today to save lives.

Senator GORTON. Does the Fire Administration have an objective, an analytical means of setting these priorities?

Mr. BOYD. I am not certain that they have that at the present time. And I think that there are possibly some within that field that could answer that better than I. They are collecting data.

Now, whether the analysis and the breakdown of that data into the areas that would be most useful—they have done some work in this. They have identified a burn belt that all of us—and I am sure that you cannot detect it, but I am from the South.

But at the same time, we——

Senator GORTON. I am sorry your senator wasn't able to remain.

Mr. BOYD. I am sorry he wasn't able to also.

A few years ago, there was identified that we had a burn belt that extended across the southeastern part of the United States, wherein we had a greater loss of life from fire, the incidence of fire, than we had in any other part of the country.

And being from the South, it sort of shook us up. And we began to try to identify what is the reason, why do we have these deaths here? And we do not have the heating problems that they have in some parts of the country; why do we have these?

But to do a complete and through analysis, I don't want to tell you yes, that that is in the program, because I am not positive that it is. The collection of data—and they have done, the Fire Academy and the U.S. Fire Administration has done a tremendous job in improving the collection of data within and from the Fire Service.

Senator GORTON. Mr. Gerard, I assume you have not changed your views on the importance of the Center for Fire Research since this morning's hearing.

Mr. GERARD. No, sir, Senator Gorton, I have not. I have submitted a written statement, and so I will not go into that. I would like to comment a little bit, though, about some of the things that your committee will be reviewing. I feel a particular kinship with Phil Schaenman, particularly when he talks about the Japanese fire service. For the past 20 to 25 years there has been a very close relationship between Tokyo Fire Department and the Los Angeles Fire Department. For many, many years we could anticipate two delegations of Japanese fire officers coming to Los Angeles and spending months with the department sharing ideas and talking about how we do things and how they do things.

I also think it is very interesting that in Los Angeles, for almost 30 years, until proposition 13 came along and priorities shifted on how money was being spent, Los Angeles had a fire safety program in the elementary school at the fifth and sixth grade, and a repeat program in the ninth-grade science classes. We had a radio and TV program. In fact, for 2 years I was Fireman John on television in Los Angeles. We did regular TV programs, regular radio programs. We have public information officers on the scene at every fire.

It is interesting, one of the Japanese fire officers commented one time about our public information officers and commented about their "low profile" because the Japanese PIO's in Tokyo, when they are in front of a fire building, they are there, as Phil pointed out, with a sound truck. But the things that they say are things that only in a Japanese environment you could get away with. In the United States you would be in court with a libel or a slander suit in our system. It is a different system, and people in Japan have been highly sensitive to fire, as I am sure we all saw Shogun or read the book, and they have been sensitive to fire for centuries and centuries. And so their attitude about fire is very different.

As to the school system, interestingly enough, the National Fire Protection Association has one of the better curriculum programs. One of the issues we continually had to deal with in Los Angeles was that the school system wanted to teach reading, writing, and arithmetic, and fire safety education took away from that. I just read the other day the percentage breakdown of how much time is spent in each of the various curriculum areas in a public school, and they are challenged with how to include fire safety in the curriculum.

I am not a schoolteacher, and so I could not say how to include it, but I think when you get finished checking off each of the issues that you have heard today and that you will hear over and over and over again—and I am sure that Gordon Vickery has shared with you and other people in Washington have shared with you, what it really comes down to is attitude, as we talked about this morning, the social, political, economic attitudes in this country, what is acceptable, what is not.

And also, as Phil pointed out—and this is a very long, circuitous discussion to get around to the point—the research and how to change attitudes, if we wanted to change someone's attitude about what brand of cigarette they smoke, what kind of whiskey they drink, what kind of beer, what kind of socks you wear, whether you should have an alligator or a polo player on your shirt, Madison Avenue would be well funded to do that research and develop a program that would in fact make Ralph Lauren far more popular than Izod. However, to try and generate enough revenue in the industry to simply sell fire prevention, there is not much profit in that unless we recognize that the profit is saving 6,000 people who die and the $6 billion that is destroyed each year. That is the profit. It comes out of society as a whole. And the responsibility for changing that belongs to the Government.

The place where the Government addresses that issue is at the Fire Academy, the Fire Administration, and the Center for Fire Research, which is why we are so enthusiastically in favor of the reauthorization of the Fire Administration and the Fire Academy and the Center for Fire Research.

Management problems to the contrary notwithstanding. That is another issue. It is the application of Government resources to the resolution of those problems. If there are management problems, then they need to be taken care of, and then application of the resources will be even better. Now that the fruits are ripening on the tree and the American people are harvesting the fruit, this is not the time to prune the tree or chop it down. This is the time to be very gently taking care of that tree to see to it that the American people can continue to enjoy the fruits of this harvest that has been planned for many years. There is a lot of money that has been put into it by the Federal Government, by State and local programs, and we should not blitz it now. Now is the time to really move ahead with it.

Senator Gorton. Mr. Diezel, would you like to add anything?

Mr. Diezel. Mr. Chairman, I think these gentlemen and those before me have covered the points fairly well, but let me share with you a perspective slightly different from theirs. I am still in the trenches day in and day out in my municipality.

Senator Gorton. Which is——

Mr. Diezel. The city of Virginia Beach, VA. Having experienced the academic program at the Academy as both an observer and a participant, let me first and foremost say that everything that I have seen and experienced has been very positive on both a personal and professional note, and we routinely try to program from a career development standpoint our officers through that institution because of its excellence.

To echo what Mr. Gerard was just saying about pruning the tree, we do caution you in that area, if it is humanly possible to save these programs, because they have a net benefit of being very positive in the communities. The tracking mechanism for that quantitatively, to show you in terms of tax dollars, is difficult because it is going to be long term. We are not going to turn the fire problem around by having one school in one fiscal year.

Those of us in the trenches will also applaud you in terms of your management overview and the investigative techniques that this committee and Senator Gore and others have been doing. We are very close to the dollar issues and the proper expenditures for them.

I think that the central focus idea is the leadership role for the Federal Government. I would urge you in terms of the stipends and all of the other things that we are looking at here to be very cognizant of that. I do not think that because of our fractionalized nature of the fire service across the United States, some 33,000 or so separate departments, that we will ever uniformly have the results that some of the foreign countries have had because of their centralized nature to the approach of fire fighting, and in some cases, as the psychologists tell us, the significant traumatic event, which is war, in our case, it is interesting to note that in Switzerland I saw rows of houses, and I said, well, do you not have fire problems here? And he said, well, occasionally, but they are not too severe. And then the Swiss fire marshal went on to tell me, he said, besides, if this man's house catches on fire and burns this one down, this fellow must pay for both.

So there are different approaches to problem solving based upon those experiences.

What we were looking at here is the Federal Government leadership role through the academy, and we think that is a viable program, and I, in speaking for the International Association of Fire Chiefs, I think you are going to have a fairly unanimous voice there.

One point more. On two occasions you have raised the issue about the academic involvement. I am inclined to think that there is a much larger role there than we have currently explored, but perhaps from a different perspective than your question. For instance, in the architectural curriculum of most schools, the architect does not get any fire safety design in terms of what he is building and how fire may or may not behave. The engineer virtually is in the same position except for the three institutions that specialize in fire protection engineering. Those are areas that we do need to get into, in my opinion, and I think many of my fellow fire chiefs would support that.

The area of behavior modification, my background is history as a pre-law, and of course, I flunked the pre-law side of it and ended up as fire chief. I cannot tell you the mechanics of good, solid behavior modification, but I do know that if we are going to turn the fire picture around, it starts in that educational area. Perhaps that is another role for the academic community, to try to support those of us downstream.

Those are some of the things that I would share with you as a practitioner. But again, let me emphasize that as both a participant and as part of the curriculum side of this thing, we have had excellent results from the Fire Academy. I have not had much contact with the Fire Administration recently, but the academy has just been terrific, barring management problems.

[The statement follows:]

STATEMENT OF CHIEF HARRY E. DIEZEL, FOR THE INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

I am Chief Harry E. Diezel representing the International Association of Fire Chiefs (IAFC). Our organization represents 8,200 career and volunteer fire chiefs who are responsible for managing fire protection services, emergency medical services, airport crash-fire-rescue services, hazardous material control and who are deeply involved in emergency response to disaster of all types in communities of our nation.

I am also Fire Chief for the City of Virginia Beach, Virginia. I am familiar with both paid and volunteer fire departments.

I am here to point out to you the many and serious concerns of our nation's fire chiefs to the very detrimental funding reductions contained in the proposed federal budget for Fiscal Year 1986-87.

Since the release of the report "America Burning", the Federal Government has become a key partner with state and local governments in a nationwide battle to reduce the tragic life loss and unnecessary property loss that results from fire each year in the United States.

This partnership has finally started to show significant impact in reducing these losses, but the battle has just begun.

Efforts by the United States Fire Administration (U.S.F.A.), National Fire Academy (N.F.A.), and Center for Fire Research (C.F.R.) have helped to provide a diverse attack on the fire problem from several important directions.

A $2 million dollar proposed reduction in the United States Fire Administration (U.S.F.A.) budget for Fiscal Year 1986-87 threatens viable and successful efforts like the Community Partnership Against Fire, Anti-Arson, and important Fire Fighter Health and Safety programs. Also threatened is Operation Life Safety, a novel and joint effort of the International Association of Fire Chiefs in concert with private sector initiatives. This effort is directed at developing and implementing more economical and appropriate means of providing "built-in" fire protection to buildings throughout our nation.

Zero funding proposed for the Center for Fire Research can only result in a total lack of sorely needed research into fire and its production of toxic agents and byproducts which continue to kill thousands of our citizens each year. We find continuation of fire research as important to fire safety as is research to our armed forces in keeping themselves abreast technologically.

At the National Fire Academy the elimination of student stipends covering travel costs for fire officers from around our country to attend advanced technical and management training is also of major concern to us.

As Fire Chiefs we must constantly upgrade the knowledge of our senior fire commanders in developing their management skills for the time when they assume the position of fire chief in communities across our nation. The National Fire Academy has become a most crucial yet efficient and effective means to that end.

Elimination of student stipends not only hits hard at the important development of future fire officers, but more importantly, its impact will fall most heavily on the smaller and volunteer departments that can ill-afford to bear travel costs for such training.

The best way to accent the severity of the National Fire Academy budget reduction is to understand that of approximately 30,500 fire departments in our nation, two-thirds or 20,000 serve populations of under 2,500 people. The only hope for small fire departments like these is the continuation of National Fire Academy student stipends to allow such departments to have their officers receive crucial technical and advanced management training which they could not otherwise afford or provide.

The International Association of Fire Chiefs feels strongly that the Government of the United States must continue to play an important and key role in all these important fire related areas in an effort to continue an effective battle against fire throughout the United States. To proceed with reduced funding for FY 86–87 is to turn the back of government to its citizens and to allow fire to continue to take its tragic and unnecessary toll throughout our great nation.

We alert the Senate of the most severe impact of these budget reductions and hope that the members of Congress will stand strong in assuring all of our citizens and fire fighters a continued commitment to reduce the terrible loss in lives and property that continue to result from fire in America.

STATEMENT OF HAROLD A. SCHAITBERGER, DIRECTOR, DEPARTMENT OF GOVERNMENTAL AFFAIRS AND PUBLIC RELATIONS, INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

Mr. Chairman, Members of the Committee, My name is Harold Schaitberger and I am Director of Governmental Affairs and Public Relations for the International Association of Fire Fighters. Our international union represents 175,000 professional fire fighters with membership in each of the 50 states. We appreciate the opportunity to appear today to express our views concerning the reauthorization of the United States Fire Administration, the National Fire Academy, and the Center for Fire Research. In order to better understand our concerns on what we believe is the inadequate funding of these essential governmental programs, a brief review of history of the focus on the fire problem by our federal government would be helpful.

It has now been almost 15 years since the National Commission on Fire Prevention and Control released its report entitled, "America Burning". The findings in that report conducted by a distinguished presidential Commission on Fire Prevention and Control helped open the eyes of the American public and our nation's government to some harsh facts. The United States, the greatest nation on earth which has the most advanced technology in the modern world had the highest per capita death and property loss rate as a result of fire of all the world's major industrialized nations. The Commission's report included the following recommendation:

1. That the Congress establish a U.S. Fire Administration to provide a national focus for the nation's fire problem and promote a comprehensive program with adequate funding to reduce life and property loss from fire.
2. The establishment of a National Fire Academy to serve as the hub of a natioanl training and educational system for the nation's fire services.
3. The implementation of a natioanl fire safety education program.
4. The reallocation of local resources from primarily fire suppression to fire prevention.
5. The improvement of equipment and techniques to reduce fire fighter death and injury.
6. Research in the urban fire problem. The Commission further recommended the reinforcement of supporting programs in other agencies, including an increase in burn treatment centers units and programs in the U.S. Department of Health, Education and Welfare.

The legislation creating the U.S. Fire Administration (at that time the National Fire Prevention and Control Administration), the Fire Prevention and Control Act of 1974, was structured to provide for a United States Fire Administration and the establishment of the National Fire Academy within the United States Fire Administration which was to facilitate specialized training in areas subject to the jurisdictions in the planning and implementation of their own fire protection programs.

The recommended appropriations for planning, development and implementation of this proposed U.S. Fire Administration was $5 million for the first year $50 million for the second year and $128 million for the third year. On October 29, 1974, President Ford signed into law the Federal Fire Prevention and Control Act, Public Law 93-498. Our nation's fire services for the first time felt that the United States Congress recognized that a federal focus and federal attention must be given to this terrible crises occuring in our nation. The United States Congress at that time made clear their concern by stating that fire was an undue burden affecting all Americans and that such losses of life and property from fire were unacceptable to the Nation. The Congress further stated that the unacceptable high rates of death, injury and property loss from fire could be reduced if the federal government established a coordinated program to support and reinforce the fire prevention and control activities of state and local governments.

The nation's fire service organizations were buoyed by the clear intent of Congress to create this federal fire focus and address the fire problem on a national level by lending support and assistance to state and local governments. Unfortunately, the recommended funding levels for this new Administration were never reached, never even close. The Administration has been funded at a miniscule level since its establishment. during this same time, our nation's fire service organizations, including the IAFF, through the Joint Council of National Fire Service Organizations have strongly supported the reauthorization of the Fire Administration and strongly supported increased funding for the Administration, the Academy and the Center for Fire Research each subsequent fiscal year.

The first three years of existence for the Administration 1975-1978 seemed to be adequately funded at best. We felt that the Administration at that time was viewed as an insignificant program within an immense Department of Commerce. We believed the program did not receive the attention, understanding or support from a Commerce Department primarily focused and involved in other program areas of federal government. Therefore, the nation's fire service organizations after considerable deliberations supported the proposed Reorganization Plan No. 3 proposed by the Carter Administration which would meld the U.S. Fire Administration into a super disaster oriented agency now known as the Federal Emergency Management Agency, FEMA. Our support was not offered without considerable discussion, review and amending of the proposed plan so as to protect the status, focus and level of program commitment for our nation's fire protection operations. Now, after over 4 years of FEMA, not only have we been faced with inadequate funding but in 1982, the current Administration recommended the elimination of the U.S. Fire Administration and in 1983, the elimination of the Center for Fire Research. Only through the efforts of the Joint Council, its member organizations and the continued and consistent support of the U.S. Congress and in particular, this Committee and its distinguished chairman, was the Fire Administration reauthorized, funds appropriated and allowed to continue in existence.

So, where are we today, We are looking at an Administration budget which as requested and recommended would in real dollar terms, when adjusted for inflation, mean a net decrease in available funds for our nation's fire service programs. We have a National Fire Academy which is now a small part of a larger federal Emergency Management Institute. This Institute, which occupies the site originally acquired for the Fire Academy itself has now all but engulfed our nation's fire service education programs. We have a Center for Fire Research which continues to do important work but under a constant threat of either inadequate funding or an Administration which recommends its total elimination. The fact of the matter is after 15 years our nation's fire service interest at the federal government level has moved forward very little.

This is not to say that significant strides have not been made since the establishment of the Fire Administration and of our National Fire Academy because many programs have been developed and successfully implemented. A few examples of some of these successful programs and our continued support for their existence follows: The continuation of the Open Learning Fire Service Program as part of the National Fire Academy. This Grant Program provides fire fighters in all 50 states with the opportunity to earn a baccalaureate degree in fire administration and fire prevention technology. Fire fighters are able to learn at a distance from the college campus while guided and assessed by faculty members. We believe that this program is a critical component for increasing the level of professionalism of our fire service personnel. The IAFF is very proud to be associated with the Open Learning Fire Service Program. It is a high quality cost-effective approach that provides the only higher education bachelor's degree opportunity available to all of the nation's fire fighters. Since this program offers a means to professional development available nowhere else, we are very concerned and committed that the program be maintained and adequately funded.

In our view, fire fighter health and safety is the most important programatic area within the U.S. Fire Administration. As you are well aware, fire fighting is among the nation's most hazardous occupations with one of the highest line of duty death injury and illness rates. The Fire Fighters Integrated Response Equipment System Project (Project FIRES), which was initiated in cooperation with NASA, is an example of the progress that has been made in this area. While some progress has been made, we must nevertheless stress the absolute necessity of increased funding not only for the continuation but also for the expansion of the U.S. Fire Administration's effort if the unacceptable death, injury and illness rates among fire fighters are to be reduced. The work of Project FIRES which has developed improved lightweight personal protective clothing and equipment for the fire service is an excellent example of one step forward which has been taken.

Other fire fighter occupational health and safety research priorities, however, still need to be addressed. Such as, the development of a standardized medical protocol, the treatment of injured fire fighters, so that all fire fighters can receive the highest quality medical care possible when they are injured. The research and development of improved equipment, such as ladders and ropes so that problems and tragedies resulting from breaking ladders and ropes can be eliminated. There is a great need for research into occupational stress and its impact on our profession. There is also a great need for research into the impacts, dangers and possible protections for fire fighters from burning synthetics, exposure to carcinogens and other toxic substances and chemicals.

Another program within the safety and health area of the U.S. Fire Administration in which the IAFF takes a particular interest is the Apprenticeship Training Program. This program managed by the IAFF in cooperation with the International Association of Fire Chiefs provides support for the development and tracking of basic fire training and related work and cooperation with municipal governments. The program is vital to the fire services and should be continued and adequately funded. At this time its funding has been greatly reduced.

Mr. Chairman, our International union is experienced enough to understand the procedures, pressures, and politics of our United States Government budget process. We understand that the looming deficit is of severe proportions and must be addressed and reduced. We also understand that the pressures on Congress to make vital decisions on where funding must be trimmed or cut in order to help reduce the deficit, is of no insignificant proportion. We do find it interesting, however, that at the same time that our country is spending hundreds of billions of dollars to develop questionable weapons systems for the defense of the citizens of our nation and at the same time spending hundreds of millions of dollars for the development of civil defense programs to protect our citizens from the possible holocaust we all pray will never take place, is still only spending a few dollars in helping our citizens from the daily ravages that take lives, cause severe crippling injuries and destroys millions of dollars worth of property every day and in every state of this nation by fire.

We ask for the Subcommittee's continued support not only for the reauthorization of these programs but also for a new and increased commitment of funding so that a substantial reduction in the losses incurred can be experienced.

Thank you.

Senator GORTON. Thank you all very much. We appreciate your help.

We are adjourned.

[Whereupon, at 3:40 p.m., the committee recessed subject to the call of the Chair.]

[The following information was subsequently received for the record:]

FIRE PREVENTION AND CONTROL: THE FEDERAL ROLE*

INTRODUCTION

The Nation's fire problem is most strikingly exposed through one statistic—according to estimates provided by the National Fire Protection Association [NFPA], 6026 people were killed by fires in 1983. Of these fire deaths, 106 were firefighters. Other statistics help round out a description of America's fire experience: in 1983, the number of fires reported was 2,326,500; civilian (i.e. non-firefighter) injuries stood at 31,275; and property loss was estimated at almost $6.6 billion.[1]

This record can be improved. The United States Fire Administration [USFA] reports that the U.S. has the second highest death rate per capita (after Canada) of all the world's industrialized nations.[2] A city-by-city comparision can be especially revealing. For example, Hong Kong, a tightly packed, densely populated city of 5.6 million, averages 40 fire deaths a year. Meanwhile, Chicago, with a population of 3 million has suffered at least 120 fire deaths per year in recent years.[3]

Fire prevention and control is traditionally a State and local responsibility. But statistics such as those cited above have motivated Federal involvement in the fire problem during the past 20 years.

In 1968 Congress passed the Fire Research and Safety Act of 1968 (P.L. 90-259), which: (1) established what is now called the Center for Fire Research at the National Bureau of Standards [NBS]; and (2) established the National Commission on Fire Prevention and Control. The Act charged the Commission with undertaking "a thorough study and investigation of [the fire] problem with a view to the formulation of recommendations whereby the Nation can reduce the destruction of life and property caused by fire in its cities, suburbs, communities, and elsewhere."

In 1973 the Commission issued a report called *America Burning,* which recommended that "there should be an entity in the Federal Government where the Nation's fire problem is viewed in its entirety, and which encourages attention to aspects of the problem that have been neglected."[4]

While calling for a Federal role in fire protection, the Commission made it clear that such a role should be limited to "lending technical and educational assistance to State and local governments, collecting and analyzing fire information, regulating the flammability of materials, conducting research and development in certain areas, and providing financial assistance when adequate fire protection lies beyond a community's means."[5]

In response to *America Burning,* Congress passed the Federal Fire Prevention and Control Act of 1974 (P.L. 93-498) which established the USFA and the National Fire Academy (NFA). In keeping with the theme of coordination set by the Commission, the Act stated: "The unacceptably high rates of death, injury, and property loss can be reduced if the Federal Government establishes a coordinated program to support and reinforce the fire prevention and control activities of State and local governments."

The Act established the National Fire Prevention and Control Administration (the NFPCA was later renamed the USFA) in the Department of Commerce. The NFPCA initially consisted of five divisions: the National Academy for Fire Prevention and Control, the National Public Education Office, the National Fire Data

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* By Lennard G. Kruger, Analyst in Science and Technology, Science Policy Research Division, Congressional Research Service.

[1] Karter, Michael J. and Joan L. Gancarski. Fire Loss in the United States During 1983. Fire Journal, Sept. 1984. p. 49.

[2] Federal Emergency Management Agency. U.S. Fire Administration (USFA). Fire in the United States (Second Edition). July 1982. Washington, 1982. p. 21.

[3] Schaenman, Philip S. and Edward F. Seits. From Tokyo and Down Under: International Approachs to Fire Prevention. Fire Chief, Dec. 1984. p. 27.

[4] National Commission on Fire Prevention and Control. America Burning. May, 1973. Washington, 1973. p. X.

[5] Ibid.

Center, the National Fire Safety and Research Office, and general administration. When the NFPCA began operation, fire deaths were estimated at 9,000 per year.

During fiscal year 1975 the budget of the Center for Fire Research (CFR) was consolidated with that of the NFPCA in order to foster a close coordination with the NFPCA.[6]

Since 1975 the Federal fire program has undergone many changes. These include the following:

1979—USFA is reorganized into the Federal Emergency Management Agency (FEMA);

1981—USDA and NFA budgets are separated;

1982—USFA is targeted for elimination and most of its staff departs. Under pressure from Congress, a last minute decision is made to continue the USFA with reduced funding. The USFA is transferred to the National Emergency Training Center in Emmitsburg, Maryland;

1983—USFA is totally restaffed with 20 employees, primarily with fire service backgrounds; and

1983—The Center for Fire Research budget is completely separated from the USFA budget.

In 1981, USFA's budget was $13.5 million. The Administration is requesting $7.68 million for fiscal year 1986. Currently the USFA consists of four offices: Fire Policy and Coordination, Firefighter Health and Safety, Fire Prevention and Arson Control, and Fire Data and Analysis. A description of USFA programs is provided in the appendix. Fire deaths today stand at nearly 6,000 per year.

The Federal Fire Prevention and Control Act assigns to the USFA the task of defining and fashioning a coordinated fire program on the Federal level. The challenge for Federal fire policymakers comes with determining the specific approaches and strategies which can most effectively reduce the Nation's fire loss, given budget limitations and the prescribed Federal role as a supporter and reinforcer of state and local fire prevention and control efforts. This involves not only selecting fire loss reducing approaches that work best, but also choosing the most cost effective means for implementing these approaches.

This report is divided into two parts. The first part presents the multiplicity of approaches and strategies which are often cited as being necessary for reducing the toll of destructive fire. The second presents fire community views on the extent that Federal fire entities are equipped to fashion objectively and judiciously a coherent policy to reduce the Nation's fire loss.

REDUCING THE NATION'S FIRE LOSS

There are many approaches and strategies available for reducing the Nation's fire loss. The following assortment of factual statements, often cited in discussion of America's fire problem, convey the complexity of fire and the wide range of "pressing needs" or "promising solutions" that many feel demand attention:

1. Sprinklers: "Excluding deaths caused by explosion or flash fire, there are no known occurrences of multiple loss of life in a fully sprinklered building due to fire or smoke."—U.S. Fire Administration [7]
2. Smoke detectors: ". . . data show that when a fire occurs, the risk of dying in a home where detectors are not installed is twice the risk in homes where detectors are installed."—USFA[8]
3. Arson: "Experts have estimated that the incidence of arson in this country has tripled or quadrupled in the past decade. . . In terms of losses, arson is fast becoming the leading crime in America."—Richard Bland [9]
4. Firefighter safety: "Deaths and injuries suffered by the Nation's firefighters continue to be the highest of any occupation."—International Association of Fire Chiefs [10]

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[6] International Society of Fire Service Instructors (ISFSI). Evaluation of Programs of the United States Fire Administration 1974-1983. Prepared for the USFA, Federal Emergency Management Agency. 1983. p. 51.

[7] Federal Emergency Management Agency. U.S. Fire Administration. An Ounce of Prevention. Washington, 1983. p. 51.

[8] U.S. Fire Administration. Fire in the United States. p. 176.

[9] Bland, Richard E. Toward a State Level Strategy for Destructive Fire Control. Office of Fire Safety Services, Pennsylvania Emergency Management Agency. Jan. 15, 1983. p. 29.

[10] Statement of Charles Kamprad, International Association of Fire Chiefs. In: U.S. Congress. House. Committee on Science and Technology. Subcommittee on Science, Research and Technology. Earthquake and Fire Act Authorization. 98th Cong., 1st Sess., March 15, 16, 1983. Washington, U.S. Govt. Print. Off., 1983. p. 286. [Hereafter referred to as Subcommittee on Science, Research and Technology, Fire Act Authorization]

5. Toxicity of burning materials: "Most fire deaths occur in homes from either smoldering combustion or a large flaming room fire. Eighty percent of these deaths are due to the inhalation of smoke or hot gases and are not a result of burns."—Center for Fire Research [11]

6. Fire-safe cigarettes: "More than a third of all Americans killed by fire die in fires ignited by one common source: cigarettes . . . . In 40 percent of these cases, those who died were not smoking and were not responsibie for starting the fires. The available data indicates that cigarette-ignited fires are far and away the leading cause of fire deaths in the United States."—Senate Committee on Governmental Affairs [12]

7. Alternative heating fires: "While [portable heating] fires account for only 2 percent of all structure fires, the chances of dying should such a fire occur is four times greater than in the average fire."—USFA [13]

The array of apporaches and problem areas suggested by the above statements are by no means complete. Other fire issues involve: building codes and standards, flammability of clothing and furniture, rural fire protection, emergency response management, transportation fire hazards, and many others.

On which fronts, then, can the fire problem be best attacked, and in which areas should federal emphasis be placed? Obviously no single approach offers a straightforward "cure-all." The fire problem reflects the complexity of American society, and there are countless tradeoffs and complicating factors to be considered when contemplating a comprehensive fire loss reduction strategy.

Fire prevention versus fire suppression is perhaps the classic tradeoff question discussed in the fire community. Should efforts be focused more on properly reacting to, responding to, or putting out a fire; or on preventing a fire before it gets started? Of course, prevention is desirable, but given the fact that human carelessness is responsible for most fires, can prevention efforts be successful enough to reduce the need for an expanded suppression capability? Obviously, both are critically important; it is not an "either-or" proposition, but how should the question of "suppression vs. prevention" influence priority-setting when assigning relative emphasis to different fire reduction strategies?

Within the two generally cited categories of "suppression" and "prevention" are additional variables and questions which further cloud the picture. After a fire starts, many factors can mitigate its growth and effect. These include automatic suppression and detection systems (sprinklers and smoke detectors), an adequate emergency response capability (fire departments), people's ability to react intelligently in a fire situation, and building construction designed to control the spread of smoke and flames.

Fire prevention also offers differing approaches. To prevent a fire, is it more feasible to change people's behavior, or to change the physical environment (furniture that won't ignite, cigarettes that won't smolder) so that people are less likely to start fires in spite of their carelessness?

Modifying the physical environment is hardly straightforward either. A typical fire death scenario usually involves a carelessly dropped cigarette smoldering in a chair or sofa which produces the smoke and toxic gases that kill the occupants sleeping in another room. Which component of the scenario should be altered, the cigarette or the furniture? Further tradeoffs come to mind. A properly maintained and installed smoke detector, a sprinkler system, and/or occupants who are fire safety conscious could also prevent the deadly scenario.

Target groups are another complication which must be factored into fire loss reduction strategies. Fire strikes all segments of society. A particular approach which might work for one group may not work for another. For example, despite the demonstrated effectiveness of smoke detectors on the general public, they are less likely to help high-risk groups such as senior citizens and young children. These groups are less likely to hear and understand the alarm, and they have a limited capacity to escape a fire. Another high risk group is low-income communities. Often this group lacks the means to purchase, install, and maintain automatic supression and detection equipment.

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[11] U.S. Dept. of Commerce. National Bureau of Standards. Center for Fire Research. Further Development of A Test Method for the Assessment of the Acute Inhalation Toxicity of Combustion Products (NBSIR 82-2532), June 1982. Washington, 1982. p. 1.

[12] U.S. Congress. Senate. Committee on Governmental Affairs. Cigarette Safety Act of 1984 (Senate Rept. 98-597); report to accompany S. 1935, 98th Cong., 2nd Sess., Sept. 10, 1982. p. 1.

[13] Federal Emergency Management Agency. United States Fire Administration. Preliminary Fire Statistics for 1983. Washington, 1984. p. 17.

Besides tradeoffs and target groups, there is yet another factor which complicates fire policymaking. Many of the approaches and strategies available for reducing fire loss touch on highly controversial issues which could significantly affect major industries such as tobacco or plastics. Behind others are a variety of groups, all vying for federal support for their particular solution to the fire problem, which more often than not, reflects the special interests of their constituencies. Thus the setting of an objective and comprehensive federal fire policy can be complicated by the controversies, and often conflicting interests, of the fire community.

An examination of two particular fire loss reduction approaches—installing sprinkler systems and controlling the toxicity of burning materials—can provide a good example of how fire protection strategies are complicated by the kinds of factors discussed above. The Federal Government is involved in both areas. Sprinkler systems are a mostly developed technology and the USFA conducts programs designed to promote their application. The CFR performs basic research on the toxicity of burning materials; the issue is highly controversial and the phenomenon is poorly understood.

Much broader in scope than combustion toxicity or sprinklers are the more generic areas of fire research and public education. These will also be discussed, since they hold implications for all of the specific approaches listed earlier.

Sprinklers

According to Harry Shaw, former Acting Administrator of the USFA, "The residential sprinkler system, working off the domestic water supply is probably the ultimate answer to residential fire protection."[14]

Sprinkler systems have been used in the United States for over one hundred years, primarily in commercial buildings. But because 80 percent of all fire deaths occur in private residences, a Federal effort has been and is being made to develop and promote residential sprinkler systems using a highly sensitive quick response sprinkler head which will activate before lethal amounts of smoke and heat accumulate in a fire. The USFA has worked with the private sector to successfully develop a residential sprinkler system that can be built into new homes or installed in existing ones.

The problem is cost and incentive. The USFA estimates that the cost of a residential sprinkler system is one to two percent the cost of a new home.[15] Homeowners lack motivation and the necessary awareness of the fire problem to spend the many hundreds of dollars necessary to retrofit their homes. Likewise, many developers and builders are more willing to accept fire risks than pay for installation, maintenance, and repair of sprinkler systems. Proposed economic incentives for promoting sprinkler systems are "trade-offs" or regulatory building code concessions which would allow less restrictive fire protection requirements for construction in exchange for sprinkler installation. Controversy exists as to whether the result of these trade-offs would be a building which is equally (or more) fire safe. Significant trade-offs could include reductions in fire resistance ratings of structural building components, or the elimination of compartmented construction in certain types of occupancies.[16]

The USFA is currently conducting research with the National Association of Home Builders (NAHB) to examine these tradeoff issues and to develop a model for cost/benefit analysis which can be applied to several standard types of construction. Other components of USFA's residential sprinkler program include research on installation standards for fast response sidewall sprinklers, local fire tests, regional and local demonstrations, and retrofit demonstrations.

The impact of sprinkler systems could conceivably affect other fire protection areas apart from building codes. For example, in 1980 the city council of San Clemente, California confronted a limited municipal budget for its fire services because of the tax reforms of California's Proposition 13. A tradeoff was made: less spending for fire services in exchange for an ordinance requiring sprinklers in all new homes. This was one of the first compulsory sprinkler ordinances in the country.[17]

It must be acknowledged, however, that the tradeoffs and fire reducing approaches taken in one community do not necessarily translate to other communities. for instance, San Clemente is an necessarily translate to other communities. For instance, San Clemente is an affluent community, whose population could presumably bear the added cost of sprinkler installation. What kind of tradeoffs, measures, or incentives would be necessary to promote the installation of sprinklers in an aging, crowded tenement building in an inner city?

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[14] U.S. Fire Administration. Ounce of Prevention. p. 5.

[15] U.S. Fire Administration. Fire in the United States. p. 180.

[16] Barris, James P. and Dario L. Conte-Russian. Sprinkler Trade-offs: Are They Justified? Fire Journal, May 1980. p. 64.

[17] The Journal of Commerce. Combating Fire Losses. Feb. 19, 1980. p. 4.

Although the ability of sprinklers to reduce fire loss is undeniable and straightforward, complexity and controversy creep in when one confronts the problem of how to put these devices into people's homes. Much research remains to be done on tradeoffs. How much will the addition of sprinkler systems to a particular environment outweight the subtraction of other fire protection approaches?

Toxicity of burning materials

All burning materials, whether natural or synthetic, produce carbon monoxide (CO), which is the toxic gas most responsible for fire deaths. However, many synthetic materials and plastics produce significant amounts of additional toxic gases during combustion or pyrolysis (heat decomposition). Burning polyvinyl chloride, for example, produces hydrogen chloride gas, while polyurethane generates hydrogen cyanide.

Meanwhile, plastics have become increasingly popular as building materials. According to Predicasts, a Cleveland based marketing research firm, the percentage of plastics used in all building materials rose from 2.2 percent in 1967 to 10.2 percent in 1981. Predicasts estimates that plastics' share of the building market will be worth $18.4 billion by 1990.[18] Fierce competition between the plastics and metals industry for markets such as electrical wiring conduits has fueled the debate on toxic hazards of combustion products.

Some interests claim that the increased use of plastics in buildings constitutes an extraordinary threat to life because of the toxic gases these synthetic materials emit during combustion. Combustion product toxicity tests performed at the University of Pittsburgh show that, on the average, smoke from synthetic polymers is at least five to six times more toxic than smoke from wood and that smoke from synthetics will kill twice as fast as wood smoke.[19] Additionally, it is charged that plastics (which are hydrocarbon based) behave like "solid fuel," buring much hotter and faster than other materials.

Others argue that regulation of plastics as building materials based on combustion product toxicity may be premature, if not completely unnecessary. While conceding that plastics produce certain toxic gases that other materials do not, they assert that it is uncertain whether any special toxic hazard exists from plastics, since carbon monoxide is produced in sufficiently lethal quantities by all burning materials.

On a more general level, it is argued that assessing the fire safety of a material based only on its toxicity is misleading; a meaningful approximation of a material's fire hazards must address many other factors and properties in addition to toxicity. These include: ease of ignition, volume of smoke generation, rate of heat release, flame spread, and rate of burning. Tradeoffs must be considered when judging the relative fire safety of a particular material. The question has been raised—what is more hazardous: a material that ignites slowly, burns slowly, and gives off harmful gases; or a material that ignites and burns quickly (thus causing the fire to spread faster), but gives off relatively non-toxic gases? Polyvinyl chloride (PVC), for example, burns very quickly and evolves deadly hydrogen chloride gas. But it must be exposed to an open flame to ignite, whereas cloth or wood can be more easily ignited by a smoldering cigarette.

Another argument used to counter the attacks on plastics is this: despite the increased use of plastics in buildings, fire deaths have actually decreased in recent years. It if further asserted that targeting plastics is a misdirection of effort towards solving the Nation's fire problem—that focusing on such issues as public education, smoke detectors, and sprinkler systems would have a much greater impact on fire safety.

Those in favor of regulating plastics in buildings respond that the effects of burning plastics in fires shouldn't be expected to show up in statistics of fire death loss for 20 to 30 years, since most fires currently involve older buildings which contain mostly nonsynthetic materials. It is also argued that the number of fire deaths has fallen mainly because the number of reported fires in the United States has dropped, and because the use of smoke detectors, in the home has skyrocketed. Thus, benign effects of plastics should not necessarily be inferred from the decrease in fire deaths.

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[18] Green, Charles. Plastics Fire Hazard Issued Aired. The Journal of Commerce, May 18, 1983. p. 22B.

[19] Ibid.

Any attempt to regulate materials based on their combustion product toxicities depends on the existence of adequate test methods. Much controversy surrounds the question over what constitutes an adequate test and whether such a test now exists. Presently, there is no consensus on any one test method that is appropriate for broad application. The CFR has developed a method which can determine relative toxicity levels of various materials. However, the CFR has made it clear that its test method is primarily intended for research and preliminary screening purposes and stresses that the method is not intended to be used alone in evaluating the fire safety of a material since additional factors must be considered for a given situation.

Since every fire situation offers a different combination of combustion factors and conditions, the problem of creating a meaningful test method in the laboratory environment is extremely complex.

Most observers agree that no test successfully re-creates real world conditions and that the mechanics of combustion product toxicity require much more research. However, disagreement centers on the question of whether current tests can or should be used for regulation. Opponents argue that a standardized toxicity test requires arbitrary setting of combustion conditions. This leads to arbitrary toxicity ratings of materials, which, though reproducible, fail to apply to real-life situations in which combustion conditions vary greatly. It is further asserted that fire technologies and toxicologists do not yet know how to incorporate data from smoke toxicity tests into a total fire hazard assessment.

Proponents of toxicity tests counter that the usefulness of existing tests does not necessarily hinge on their ability to faithfully re-create real-world conditions. They point out that flammability tests and standards suffer from the same limitations, yet are used widely; flammability of mattresses and carpets, for example, are governed by Federal regulations. They claim that existing combustion product toxicity tests are good enough to enable builders, regulators, and manufacturers to draw useful distinctions among materials. At the very least, these tests could eliminate materials which are much worse than the rest, from the standpoint of toxicity.

Amid the controversy, arguments, charges, and countercharges surrounding combustion product toxicity, there are two points that almost all parties seem to agree on. One is that the fire death rate in the United States is too high and that actions must be taken to reduce it. The second point is that scientists do not yet fully understand the effect of the total fire environment on how a fire starts, spreads, and kills people.

Debate is shaped around these two general areas of agreement. Those in favor of tilting the Government machinery toward regulation may then ask the question: doesn't the immediate threat to life safety from burning plastics outweigh the objection that existing test methods are not yet fully developed? And those opposed to regulatory action can frame the question this way: if scientists determine that the total fire hazard resulting from synthetic materials is no greater than that of other materials, are we not needlessly diverting attention from other options (such as public education, sprinklers, and smoke detectors) which can much more effectively and immediately reduce fire deaths and injuries? Perhaps as scientific understanding of fires progresses, the answers to these questions will become more apparent.

Public education

America Burning identified a lack of public awareness as one of the major causes of the fire problem. Unfortunately, the Commission's assessment of public concern about fire is as true today as it was in 1974:

> . . . the American public is indifferent to and ignorant of the heavy toll of destructive fire. The problem has not reached the American consciousness with the same force as, for example, the far less lethal problem of air pollution. . . . Indifferent to fire as a national problem, Americans are similarly careless about fire as a personal threat. There is an old saying in the fire protection field, to the effect that fires have three causes: men, women and children. It takes the careless or unwise action of a human being in most cases, to begin a destructive fire.[20]

Some believe that educating the public about fire offers more promise than any other approach for reducing fire loss. Dr. Anne Philips, in her minority report in *America Burning,* stressed that "widespread public education in fire safety principles should be our first concern" and cautioned:

> Much can be done by making clothing fire resistant and by installing automatic extinguishing systems and early detection systems . . . but man can, and does, circumvent the devices in stalled for his protection, painting over sprinkler heads,

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[20] National Commission on Fire Prevention and Control. America Burning. p. 4.

propping open smoke and fire doors and putting a penny in the fuse box. There is no substitute for understanding how to prevent fires and what to do when fires occur.[21]

Public awareness can often determine the effectiveness of some of the seemingly "technical" approaches to reducing fire loss that were mentioned earlier. For example, at a recent national conference on fire prevention, Mr. Armour Floyd, a fire prevention specialist in the Philadelphia Fire Department, lamented the difficulty in persuading inner city residents in Philadelphia to install free smoke detectors in their homes.[22] A lack of awareness can also cause people to improperly install and maintain their detectors. And even if the detector is properly installed and operating, people often don't know how to escape after the alarm goes off. Thus, a technological means for reducing fire loss can be limited by people's indifference and ignorance of the fire problem.

Not everyone enthusiastically endorses public education as the primary answer to the Nation's fire problem. Some see public education as a fruitless exercise and point to the ineffectiveness of the seat belt campaign as an indication that no particular program can significantly alter people's behavior or cultural patterns.[23]

Federal public fire education programs were shifted from the USFA to the NFA after both were reorganized into the National Emergency Training Center in 1983.[24] Additionally, the USFA has launched the Community Volunteer Fire Prevention Program (CVFPP) which distributes small grants ($10,000 to 25,000) to local volunteer service organizations across the country. The organizations used the grants to involve citizens, the fire service, and the private sector in developing ongoing public education and fire prevention programs.

Critics of the program, while acknowledging its benefit to the communities that receive grants, wonder how the program will raise public awareness of fire on a national level. They feel that the money would be better spent on developing a public fire education program that would be applicable nationwide.[25]

USFA officials claim that the local programs will be evaluated for generic use. They also point out that since American society is culturally diverse, it is necessary to try different public education approaches in many different local communities.

Fire research

Research can be seen as a means of increasing an understanding of the problems and solutions related to fire. According to Dr. Jack Snell, Director of the Center for Fire Research, the purpose of CFR is "to provide underpinning knowledge, data, and information to all of those in the fire community to bring about the reduction in [fire] losses."[26] The Center's stated objective is to supply the scientific and technical basis for reducing fire losses and the costs of fire protection by 50 percent. Besides CFR, other Federal agencies (such as the Federal Aviation Administration, the Bureau of Mines, and the National Aeronautics and Space Administration) are also involved in basic fire research. However their research is directly related to the specific missions of those agencies.

Much of CFR's work addresses many of the fire loss reduction approaches mentioned earlier. For example, CFR currently investigates fire toxicology and smoke hazards, furniture flammability, and wood stove fire safety. CFR places a major emphasis on the development of computerized models which can quantitatively describe the dynamics of fire. In testimony before the House Science and Technology Committee, Dr. Snell explained how this tool could be used to solve some of the difficult tradeoff questions of interest to the fire community:

> The problem that the . . . fire official faces now in looking at a new technology, for example the residential sprinkler is a case in point is a very difficult one. What means does he have available to tell what the trade is going to be? Adding a sprinkler and reducing the compartmentation or self-closing doors or what have you? Many feel that no such tradeoffs should be made. To resolve those disputes, we need a means or tools for evaluating in quantitative terms and estimating exactly what

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[21] Ibid. p. 153.

[22] Floyd, Armour. Remarks delivered at the 1985 National Partnerships Against Fire Conference sponsored by the Federal Emergency Management Agency. Feb. 1, 1985.

[23] Personal communication with Arthur C. Delibert, Citizens Committee for Fire Protection. Dec. 18, 1984.

[24] ISFSI. Evaluation of Programs of the USFA. p. 183.

[25] Randleman, Bill. Is it volunteerism or pork-barrel politics? Fire Chief, Dec. 1984. p. 25.

[26] Statement of Jack Snell, Director, Center for Fire Research. In: U.S. Congress. House. Committee on Science and Technology. Subcommittee on Science, Research and Technology. Fire Prevention and Control. 98th Cong., 2nd Sess., June 22, 1984. Washington, U.S. Govt. Print. Off., 1984. p. 145.

the effects would be on smoke propagation, on fire development, access to escape routes and means of effective rescue. Those are precisely the tools that are in the development stage right now. They are computer based simulation models that provide quantitative means to answer precisely those types of questions.[27]

It is believed that if the complexities of a fire scenario can be simulated in a computer model, the impact on fire safety from the many variable in a given environment could be predicted. This information could be used for structural design and engineering, in the formulation of building and fire codes, and in materials and product development.

A National Fire Research Strategy Conference was recently convened by the CFR and the National Fire Protection Association. At the Conference's first meeting in August 1984, participants included representatives from industry, trade and professional associations, academia, research and testing organizations, Federal agencies, and Congress. The Conference proposes to examine the impact that new technological approaches might have on the fire problem and the fire community. Ultimately, the Conference will attempt to fashion a planned strategy for fire research in the United States.

It is important to note that the research activities of the CFR do not involve a critical aspect of the fire scenario—human behavior. An extensive study on fire research needs conducted for the National Science Foundation found that "the most pressing need is for well-designed and well-executed research on the effectiveness of different, carefully conceived fire prevention strategies. Although fire prevention education programs are carried out in almost all communities, they are conducted without regard for experimental design and statistical evaluation."[28]

Richard Bland, former Chairman of the National Commission on Fire Prevention and Control also stressed this need and listed some pertinent behavioral questions in 1983 testimony before the House Science and Technology Committee:

> . . . the concerns of human behavior extend far beyond the human habitat. The National Commission recognized that point and recommended the structure of the U.S. Fire Administration be such as to support an appropriate human behavioral effort. That was to be an important part of the research effort within the USFA.
>
> That effort never really got off the ground and I see little in the current literature related to these issues.
>
> Among the still current questions are:
>
> What are the social parameters in increased fire incidence?
>
> Does our social and economic system have incentives for fire, and if so, how can they be affected?
>
> What are the human engineering requirements of our appliances, machines, messages to various sectors of our society?
>
> What are the human engineering requirements of our applicances, machines, transportation and comfort environment that can reduce misuse and abuse?
>
> How does the public perceive fire risk?
>
> These and many others deserve at least an effort toward resolution.[29]

FIRE COMMUNITY VIEWS ON FEDERAL FIRE PREVENTION AND CONTROL [30]

The first section of this report attempts to convey the point that the Nation's fire problem is highly complex, and that approaches for reducing it can involve many difficult tradeoffs. Fire problems and solutions embrace many different sectors of society, and can adversely or favorably affect a wide array of special interests.

Study, evaluating, and implementing the various approaches for fire loss reduction is costly; Federal entities specifically devoted to reducing the Nation's overall fire loss (i.e. USFA, CFR, NFA) are funded at levels significantly lower than what was envisioned by the Commission. *America Burning* recommended a budget of $153 million for the Federal fire program. Currently, the Administration is requesting for fiscal year 1986: $7.685 million for the USFA, and $11.637 million for the NFA. The Administration has unsuccessfully requested zero funding for the CFR in the past three years.

Given then a limited budget and a variety of fire loss reduction paths to pursue, is the Federal fire prevention and control effort equipped to select objectively and systematically the mixture of approaches (in terms of emphasis, direction, and funding) which can best comprise an optimum strategy for reducing fire loss?

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[27] Ibid. p. 161.

[28] Swersey, Arthur J. and Edward Ignall. What does Fire Research Have to do with Fire Protection? Fire Journal, Jan. 1980. p. 73.

[29] Subcommittee on Science, Research and Technology. Fire Act Authorization. p. 319–320.

[30] Except where indicated, views quoted in this and the following section were obtained as responses to CRS queries.

Whether the USFA, CFR, and NFA are properly oriented to achieve such a goal, and the degree to which this goal can ever be achieved is a matter of subjective judgment. Accordingly, a cross section of the national fire community was queried by CRS, particularly on how they view the USFA as being the kind of Federal focus for fire prevention and control as envisioned by *America Burning* and the 1974 Act. Respondents quoted and referred to in this report represent firefighters groups, professional and trade associations, community organizations, fire protection engineers and researchers, academia, private industry, and the Federal Government. Although opinions expressed are subjective and may reflect the special interests of the respondent, a general sense can be derived of how the USFA is perceived in the fire community with which it must deal.

A comprehensive fire research policy is lacking and necessary

In 1974, *America Burning* characterized the need for some sort of coordinated fire research policy:

> There ought to be a clear set of priorities in federally sponsored research. Presently there is no group in the Federal Government looking at the total picture of fire research needs—including the physics and chemistry of fire, as well as medical, behavioral, and technological problems—and advising the budgetmakers on what programs deserve what level of support. This is an important function which the proposed U.S. Fire Administration would perform. As it is now, every agency's research program is, in effect, competing for dollars with every other fire research program.[31]

A significant portion of "the total picture of fire research needs" certainly falls under the purview of the Center for Fire Research (CFR), not at the USFA. According to Dr. Jack Snell, Director of CFR, the CFR is logically suited to coordinate a national fire research policy, since it is housed in NBS, an institution specifically oriented towards research. USFA, on the other hand, is located at FEMA, an emergency response agency not specifically oriented to research.

CFR maintains regular contact with other federal agencies engaged in their respective mission-oriented fire research projects. To the extent that communication channels are open between fire researchers throughout the Federal Government, there is some level of informal coordination. CFR is attempting to expand radically the coordination of fire research through the National Fire Research Strategy Conference. The Conference's stated objectives appear to be in harmony, at least in part, with the spirit of the Commission's prescription for fire research policy quoted above. The Conference's objectives are to:

1. Assess the current status of fire research;
2. Identify factors affecting progress in fire research;
3. Review the technologies that are now available for fire research;
4. Relate needs in fire research to capabilities to fulfill those needs; and
5. Recommend a course of action that will lead to development and implementation of strategies to meet the fire research needs of the Nation[32]

It is doubtful whether CFR's role as a coordinator of a fire research plan would involve any direct budgetary influence on research priority setting. It would not, as the Commission says, "advise the budgetmakers on what programs deserve what level of support." Dr. Snell makes it clear that the Strategy Conference's intention is to coordinate fire research through a process of consensus and cooperation, not direction or coercion.

Most of the respondents agreed that *America Burning's* statement on a desired Federal coordinating role in fire research is still valid, and that the problem of fire research performed in a vacuum of priority still exists. Some acknowledge the role of CFR as a fire research focal point, and cite the promise of the National Fire Research Strategy Conference. Harold Nelson of the Society of Fire Protection Engineers (SFPE) presents this viewpoint:

"In summary the society feels that progress, primarily focused in the Center for Fire Research (as opposed to the USFA) has been made in the proposing and prioritizing of research needs. The objective reference[d] from *America Burning* has not been met. It is our belief however that the effort to bring a sense of coordination involving both private and governmental research activities as being attempted by the National Fire Research Strategy Conference can potentially attack the underlying concerns that caused the National Committee on Fire Prevention and Control to make the statement. . . ."

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[31] National Commission on Fire Prevention and Control. America Burning. p. 136.

[32] Center for Fire Research and National Fire Protection Association. National Fire Research Strategy Conference. Quincy, Mass. Aug. 28–29, 1984. p. 5.

Other respondents are quick to point out, however, that the ability of CFR to coordinate a comprehensive fire research policy may be hindered by the limited institutional scope of NBS. NBS is geared almost exclusively towards the "hard sciences" and activities in behavioral sciences have been curtailed. As a result, CFR's research is oriented towards modifying the physical environment associated with a fire scenario. It does not, for example, address the problem of how to modify people's behavior in order to prevent that scenario from getting started. According to John Bryan, Chairman of the Department of Fire Protection Engineering at the University of Maryland:

"The statement [of the Commission] is still true today in a sense, there is no federal priority in relation to fire research. The National Bureau of Standards, Center for Fire Research has set their priorities within the Center. However these priorities do not consider the critical areas in medical, behavioral and operations research since these areas are not considered primary objectives within the scope of the National Bureau of Standards.

Tom Castino of Underwriters Laboratories projects a similarly cautious note when speaking of CFR and the Strategy Conference:

"The recently convened National Fire Research Strategy Conference may be able to carry out such a [coordinated fire R&D policy]; however it may not be in a position to address all fire safety concerns within all agencies of the Federal Government . . . We feel, as many in the fire field do, that the U.S. has a substantial technological base in place for mitigating the fire problem. Although there are areas of technology in need of improvement for both technical and economic reasons, we do not believe that significant reduction in fire deaths and economic losses can be achieved by purely technological solutions without considering the socioeconomic aspects of the problem."

At an initial, exploratory meeting on August 28–29, 1984, participation at the Strategy Conference was largely comprised of industry, code-making, insurance and testing groups whose products or activities could be impacted by the successful development and application of computer fire modelling technology. It must be pointed out, however, that the Strategy Conference is a new initiative, still in a preliminary stage. Conference organizers plan to expand its scope and include other groups in the fire community who have an interest in fire research. Certainly the Conference does acknowledge a broader definition of fire research than one confined to studying the physics and chemistry of ignition and the dynamics of fire growth. A Strategy Conference participant's comments presented in the conference proceedings acknowledges the need for fire research policy to reflect the complexity of the Nation's fire problem:

"Fire research is not seen to be just pure or basic research but rather all-encompassing; it must include finding solutions to the small but frequent fire problem as well as the occasional but spectacular incident. It must include the need to deal with the educational and attitudinal barriers that shape the behavior of people, not only en masse but individually when faced with fire. It must also focus on the whole question of determining the level of protection that should be provided, and on methods of assessment of risk that can be properly and judiciously accepted or not accepted." [33]

Whether CFR and the Strategy Conference will be able to address this "all-encompassing" definition of fire research cannot yet be judged at this early exploratory stage of the project. The Administration has proposed to eliminate CFR in FY 1986. Certainly, the elimination of CFR would abort any attempt to formulate a national direction and strategy for fire research through the Strategy Conference.

Given CFR efforts to coordinate fire research, how does the USFA fit in to the total picture of fire research needs? Respondents agree that the USFA has a legitimate role to play in both advancing specific research programs and in formulating a fire research policy, but they disagree as to whether the USFA is equipped or willing to fill that role.

Such disparate groups as Factory Mutual Research and the National Volunteer Fire Council (NVFC) are complimentary of USFA research efforts. Says Paul Fitzgerald of Factory Mutual (which receives grants from the USFA to develop the residential sprinkler heads):

"While there is no one group overseeing the Government's R & D need, both the CFR and the USFA have established clear priorities which have been mutually supportive. . . The research efforts of the USFA directly and aggressively attacked the residential loss of life problem, particularly through the development of residential sprinklers. The USFA R & D effort has been focused on the life safety issue and has been well coordinated with other USFA activities (e.g., educational and public awareness campaigns). There is no comparable effort available in the private sector."

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[33] Ibid. p. 10.

James Monihan of NVFC presents a similar view and cites the importance of applying developed technologies:

"The research and development that is being performed by the USFA seems reasonably well coordinated and has good results, the most outstanding of which, I feel to be, the quick acting residential sprinklers. I do feel that it is important that the Administration not be confined to research and development stage but be permitted to carry its programs through to completion. . . ."

Favorable comments such as these seem to focus on specific applied research projects that the USFA has successfully pursued (such as the residential sprinkler). Critical comments tend to cite the inability of USFA to implement an overall, general research policy. For example, Underwriters Laboratories asserts:

"The USFA has not established a coordinated integrated R&D policy for federally funded fire research. As presently constituted, the USFA would not appear to be able to carry out such a policy; there is a need for such a policy."

John Bryan of the University of Maryland echoes this opinion:

"The United States Fire Administration has not been research oriented for at least the last 2 years. The U.S. Fire Administration does not appear to have had a research and development policy since the departure of Dr. B.J. Thompson as administrator, possibly due to the extensive use of acting administrators. It would appear to be necessary and appropriate for the U.S. Fire Administrators to establish research and development priorities in consulation with other Federal agencies to coordinate a systematic, organized, effective, and economic approach to federal support research and development in fire protection."

Romeo Spaulding of the International Association of Black Firefighters cites political factors which limit USFA's ability to develop a research policy:

"It has been my impression that the USFA has attempted many times over the past four years to develop a coordinated, integrated R & D policy. However, it appears that prevailing attitudes among our Government and national fire service leaders have served to keep this attempt extremely frustrated. . . One of the major problems that I have seen occurring over and over in the USFA is that of identifying what research is to be done and who is going to do it at what cost. This area usually gets into some heavy politics and the result is not usually the best for the fire service or the reduction of the fire problem."

Thus far, comments have been presented which attribute "fire research" and "fire R&D policy" to both the USFA and the CFR. A distinction must be made between the type of research activities each agency is equipped to perform, and the nature of their respective roles in forming a research policy. While research at the CFR is basic and directed towards the chemistry and physics of fire, the research at USFA tends to develop and apply established technologies like residential sprinklers or improved firefighter clothing and equipment. A need to link these two different types of "research" was identified at the National Fire Research Strategy Conference: "The Federal Emergency Management Agency is also seen as having a major role, particularly in the transfer of the results of research to field applications." [34]

In a sense, then, the USFA is seen as playing a role at the very end of the research cycle—taking established technologies and applying them to the "real world." But in another sense, some see the need for the USFA to figure prominently at the very beginning of the research cycle. To this end, "research" is seen on a much more general level—it is the studying and evaluation of what the fire problem is, which areas need attention, and which fire loss reduction approaches would work best.

Phil Schaenman, former Associate Administrator of the USFA, acknowledges that while CFR is in the best position to set a detailed fire research policy, there should be coordination above CFR regarding where research efforts should be directed. According to Schaenman, this higher coordination used to be done at the USFA. A fire research policy should be one component of an overall fire protection policy, and says Schaenman, such an overall policy should be based on a systematic evaluation of the fire problem and an objective risk analysis of fire loss reduction strategies.

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[34] Ibid. p. 8.

Richard Bland, former Chairman of the National Commission on Fire Prevention and Control, confirms that "the coordinating and integrating function envisioned by the Commission for the USFA was to be the cornerstone of the Federal fire program." To effectively guide research directions, Bland cites the necessity for the USFA to have "a capacity to develop and assimilate a knowledge base (R&D)."

According to Bland:

"The fundamental problem remains a lack of statistically valid fire experience structured, gathered and analyzed as a research and policy guidance instrument. The design and execution of a comprehensive data system is absolutely necessary for effectively identifying and addressing knowledge gaps; hopefully, the result would provide for USFA leadership in solving the fire problem.

"Putting such a system in place and establishing its validity will be no small data gathering and analysis undertaking; it will take time. An important ingredient will be timely arrival of "thoughtful and trained observers" at the incident (local). The control of the data system must be closely held within USFA if resulting policy is not to be biased.

"Until a data system is developed the engineering and science as proposed by NBS/CFR is a best guess. Perhaps an advisory committee to USFA from the industries and professions could be constructive."

Thus, the more accurate and comprehensive the fire data, the easier it is to systematically and objectively identify approaches which will most effectively reduce fire loss.

The USFA is perceived as an agency primarily oriented to the fire service

All respondents viewed the USFA as being primarily oriented to the fire service, which by virtue of its mission is historically geared more towards fire suppression than fire prevention. Underwriters Laboratories presents a typical view:

"There is validity to the assertion [that Federal fire protection efforts have been tipped more towards fire suppression] but that is to be expected, given the present make-up and organization of USFA and in view of the fact that the major thrust of their current efforts is working with fire departments and those associated with fire suppression."

It is also stressed that the National Fire Academy embodies the orientation towards fire suppression forces. Richard Bland explains:

"There is a validity to an assertion that the U.S. Fire Administration program is tipped toward the U.S. Fire Academy and that the Fire Academy is oriented toward the fire suppression forces. That began when the U.S. Congress bought campuses and appointed fire suppression personnel as administrators and Academy personnel; that was assumed to be a considered choice. Suppression is a spectacular engineering effort and the Fire Department is highly visible and active in responding. As a result, fire departments must be recognized as influential political and social entities; firefighters have been politically active at all levels of Government for more than 200 years."

Whether the USFA and the NFA's orientation towards the fire service is appropriate remains a matter of opinion. Mr. Bland acknowledges the importance of the NFA to the fire service but cites a need to expand its activities to the entire fire community:

"An important function of the U.S. Fire Academy is to provide the organized fire suppression services with information; they are at risk and are the first responders to incidents. But of equal importance is providing information to the total fire loss management community. Within it are architects, engineers, materials experts, code enforcement officers, construction tradesmen, researchers, burn specialists and elected public officials. The Academy staff has little representation from these disciplines."

Fred Ringler of People's Firehouse Inc., a community based organization involved in arson and fire prevention issues, stresses the need for more community involvement in the fire program. He depicts a very critical picture of the fire service bias he perceives within the USFA:

"The USFA is heavily influenced by the national and international fire protection and research establishment which is dominated by the fire services. As a result, fire service representatives are privy to budget meetings, access to decision makers, input into the development and implementation of projects and programs, and have influence by nature of their proximity to the decision makers to changing program directions and priorities. They are truly insiders to an otherwise closed process. The USFA is dominated by staff from the fire services who have little expertise in program management, monitoring or evaluation . . . no one sector should control a national fire program dedicated to the prevention and control of fires in our communities. The perception that only "professionals" understand the fire problem is a myth that has been perpetuated for too long. This type of perception must be eliminated to insure a truly integrated and effective approach to preventing and suppressing fire."

Running counter to this argument is the belief that the USFA and NFA should be oriented towards the fire service because the fire service is more intimately acquainted with the Nation's fire problem than any other group. Ed McCormack, Executive Director of the International Society of Fire Service Instructors advanced this argument in a November 5, 1984 letter to USFA Administrator Clyde Bragdon:

"The major fire service organizations in this country which represent the members of the fire community, two million strong, have fought long and hard for the creation of, salvation of and increased funding for a cost effective Federal Fire Program . . . These same organizations . . . know best what the problems are and what must be addressed to reduce the nation's fire and burn problem. It is these same organizations that know best what the solutions are and still the same organizations which can most cost effectively put the expertise of their membership to work in providing these solutions. It is strongly urged that Federal fire dollars be first made available to those organizations and agencies that can immediately and cost effectively address the fire problem. Experimenting with or training others to do what others already know how to do and in fact do well is not cost effective."

It is also argued that the fire service is becoming more and more involved in fire prevention and a total fire loss management approach. Thus, the orientation of the USFA and NFA towards the fire service does not necessarily mean an orientation towards fire suppression alone.

Related to the perception that the USFA is oriented towards the fire service, is the belief that the reorganization of the USFA from the Department of Commerce into FEMA has adversely affected the agency's ability to function as an entity in the Federal Government which can view the Nation's fire problem in its entirety. Richard Bland assesses the reorganization within the context of the Commission's original intentions for the USFA:

"The National Commission recommended an administrative level for the USFA. That was a deliberate decision intended to:

"1. provide for budget support at a cabinet level;

"2. provide a recognized vehicle for communicating at departmental levels;

"3. assure an influence within the parent department and in paralleled departments; and

"4. place the focal point in a department where program impact was measurable (Housing and Urban Development or Commerce).

"The reorganization violated most if not all of these intents. The solution to America's fire problem is neither another, a higher trained, a larger, nor a better planned emergency response; that point seems brushed over at all levels of government."

Others, including Harold Nelson of SFPE, John Bryan, and James Monihan of the NVFC also address the end result of reorganization. According to SFPE:

"From the view of the Society the U.S. Fire Administration has repeatedly retrenched with each of the several reorganizations and reassignments of personnel. It has changed from a broad overview agency to a subordinate organization primarily (though not totally) concerned with the specific needs of fire departments particularly those from small and medium size communities. Initially the Society had enthusiastic contact with the USFA (then NFPCA) and an expectation of advances in technology. Presently they are not a factor in the engineering sphere. This is in no way to detract from the work that was initiated in one of their earlier phases that encouraged and funded much of the development of the fast response sprinkler head."

John Bryan is more blunt:

"Reorganization of the U.S. Fire Administration into FEMA was the beginning of the end of the U.S. Fire Administration as an efficient, effective, and accomplishing organization. Every aspect of the agency has been diminished since this reorganization . . . The consolidation of the U.S. Fire Administration into FEMA was based on political considerations and not operational or management attributes."

And James Monihan adds:

"Unfortunately, I do feel that reorganization of the USFA into FEMA has diminished the prominence and effectiveness of the Administration. It was only 1982, in fact, that FEMA decided to zero fund and effectively eliminate the USFA and the remnants of what remains after that reorganization are extremely small. The existing leaders of FEMA have been very supportive and respectful of the fire programs, though it was only after Congress reinstated the USFA in 1983 that this respect was engendered. Our concern is that future leaders of FEMA may not be so cooperative but may be more effective in the elimination of the USFA."

There seems to be a widely held view in the fire community that the reorganization of USFA into FEMA reduced the agency's effectiveness. What remains unclear, however, is the extent to which this reduction in effectiveness was due to the turmoils associated with an institutional reorganization, or to placement of the Federal fire prevention and control entity into an agency devoted to emergency response.

A Federal role is necessary in fire prevention and control

America Burning stressed that while fire prevention and control should remain a primarily local responsibility, a Federal role in fire prevention and control is needed. All respondents seem to agree with this assertion, and many identify research and development as an activity for which the Federal Government is uniquely suited. Factory Mutual cites the importance of Federal initiatives in addressing the residential fire problem:

"Past history strongly suggests that without Federal initiatives and leadership, there will be little research done to attack non-industrial fire problems. Because of cutbacks in local level fire department funding in many parts of the country, it is unlikely there will be substantial improvement in the future. Even if local initiatives were to develop, without the central focus point provided by the USFA, they would likely be diverse in nature and not as productive as has been the history demonstrated by the USFA's residential sprinkler program."

SFPE adds that local governments and private industry are limited in the kinds of research they can perform:

"It is the observation of the Society that local government seldom have the resources or facilities to undertake any lasting fire research. While some important work has been done by communities such as Los Angeles and New York City it has been sporatic and widely spaced in time. Generally it has also been very pragmatic in that it solved a particular problem at hand but produced little basic technology that could be confidently transferred to other situations.

"Important work has been done by the private sector. Most of this however has related to protection of the large investments of the private sector in productive capabilities, physical investments, and stored stock. The private sector has little incentive to invest its resources in research that is primarily directed at protection of life or other general safety considerations. Historically these areas of fire safety research have been concentrated in the Federal Government."

Again, a distinction must be made between the types of research referred to. SFPE is addressing the type of basic fundamental research conducted at CFR. CFR performs much of this research in-house, and also funds work done at universities. Factory Mutual is referring to USFA applied research activities. USFA's primary mode of operation is to contract out projects to various sectors of the fire community. For example, John Gerard of the National Fire Protection Association, sees the USFA as a "broker" of programs and a "clearinghouse" of information. USFA staff is positioned more towards managing programs than actually conducting the programs themselves.

Some see this mode of operation as fully appropriate given the size of the USFA staff (only 16 full time professional employees), the emphasis in the Fire Act on a federal program which supports and reinforces State and local fire protection efforts, and the prevailing philosophy in the current Administration that encourages joint private/public sector initiatives and volunteerism. USFA is applying this philosopy to its fire prevention efforts, and is currently examining ways to expand private sector support. Additionally, the Community Volunteer Fire Prevention Program and the Partnerships Against Fire Program seek to increase the scope and effectiveness of local fire prevention efforts.

Because USFA's mode of operation largely involves the funding of external projects, some observers feel that the selection process designating which research areas and approaches will be pursued may be vulnerable to political influences wielded by those groups that vie for funding. James Monihan of NVFC expresses this concern as follows:

"The Federal Government's role needs to be supportive of local, state and private sector efforts but continuity of planning is important. For that reason, it is vital for the administration to be insulated as well as possible from political pressures which can cause fragmentation of its efforts by repeatedly shifting its focus from program to program."

Fred Ringler of People's Firehouse offers specific criticism of what he views as a closed process in setting priorities for fire loss reduction approaches:

". . . it is important to have a Federal focus that can initiate and respond to innovative and cost effective research and development projects and to develop models for local implementation. The transfer of these models and technology is probably one of the most important reasons for USFA's existence. However, its present methods of resource allocation, lack of competitive bidding for contracts, non-existent grant policy, and methods of soliciting input into programs explains why the process does not work for some sectors and does for others. These include the fire service and research communities.

"Many of the USFA programs reflect reactive perceptions of the fire problem and do not encourage outside input, feedback, or criticism. To insure its effectiveness, the USFA should continue to support reactive programs at the local and state levels because these are important at all levels. Further, USFA should make a commitment to develop local initiatives, develop community based programs, and reaffirm its commitment to developing public/private sector partnerships."

While limited staffing at USFA may require the extensive use of contractors, it also creates a problem in managing those externally conducted programs. USFA officials admit that because of the very small size of their staff, proper on-site monitoring and detailed, analytical evaluation of the programs they fund is often impossible.

DISCUSSION

Over 10 years after the National Commission on Fire Prevention and Control issued *America Burning*, the Nation's fire problem, though partially reduced, still persists. Also persisting is the question: how should the Federal Government best be positioned to support and reinforce State and local efforts to reduce fire loss?

Federal fire policymakers face a formidable challenge. They must be able to sort through the many complex, conflicting, and often controversial fire loss reduction approaches; and they must be able to apply a limited budget towards composing an overall program which can most quickly and effectively lessen the fire problem. Many in the fire community seem to feel that the Commission's intended principal Federal fire entity, the USFA, is positioned in a way that makes it difficult for this challenge to be met. A criticism, often heard, is that the USFA does not possess an objective, analytical means of coordinating and setting priorities for determining which fire loss reduction approaches should be investigated and acted on.

The limited scope and stature of the USFA could be responsible for its perceived inability to coordinate an overall Federal fire policy. *America Burning* identified the need for a USFA with a very broad scope: "there should be an entity in the Federal Government where the Nation's fire problem is viewed in its entirety, and which encourages attention to aspects of the problem that have been neglected." Views presented earlier on the importance and relative neglect of behavioral fire research raise doubts as to whether the USFA fits the Commission's image of comprehensiveness. Behavior research is deemed too long-term and theoretical for USFA involvement, while the CFR cannot address this need because "soft science" activities do not fall within the charter of CFR's parent organization, NBS.

The limited scope of the USFA is reflected in the fire community's perception that the USFA is primarily oriented towards the fire service. Critics wonder how this fire service orientation (in terms of both staff and focus) squares with the Commission's intention that the USFA should view the fire problem "in its entirety," and may ask if it is fitting for one particular (albeit crucial) portion of the fire community to set priorities for solving a problem that encompasses many different sectors of society.

The limited stature of the USFA is also seen as a problem. According to Richard Bland, establishing the USFA as a successful focal point for Federal fire prevention and control "will depend upon positioning USFA in a manner to establish authority. By authority is meant organization and staffing to become a recognized and respected resource for fire related information."

Many feel that the many reorganizations of the USFA have robbed the agency of the institutional maturity necessary to become a recognized and widely respected Federal fire presence, and to establish a broad-based comprehenisve fire policy. In this regard, Harold Nelson of SPFE expresses a common opinion:

"Our general view on the situation at the U.S. Fire Administration is surprise that it has survived a series of reorganizations, attempts at abolishment, total restaffing, and progressive reduction in relative position and authority and still has apparently been able to perform an important function for the fire services of the Nation."

A tangible effect of the USFA's organizaioinal turmoil has been a drastic reduction in staff size. For example in 1978, before USFA's move from the Department of Commerce to FEMA, the agency was authorized for 68 full time employee (FTE) positions (not including NFA staff). Currently there are only 20 FTE's at the USFA. Many feel that such a reduction must necessarily have an effect on agency programs. For example in 1978, USFA's national data center employed 25 people. The Fire Data and Analysis Office of today is authorized at 6 positions. It funds a data exchange agreement with the NFPA and relies on a voluntary data collection organization (the National Fire Information Council). Has this reduced in-house capability affected the quality and completeness of fire data?

A lean staff has dictated a different mode of operation for the USFA—contracting out programs instead of performing them in-house. Contracting, by its very nature, is susceptible to criticism that the process could be subject to influences from various groups vying for funding. For example, many of the community based organizations involved in fire prevention have charged that because the USFA is oriented to fire service, contracts are mostly awarded to fire service groups. Thus, a capability to set objectively and analytically priorities in order to decide which and to what extent different fire loss reduction approaches should be pursued seems worthwhile.

Ironically, the small staff size which creates the need for a program management approach, at the same time, limits USFA's ability to monitor and evaluate the programs they fund. USFA officials also acknowledge that their small size and excessive workload (which consists of managing outside programs) limits their ability to formulate any long range fire prevention and control strategies.

There are those who defend USFA's fire service orientation. They maintain that it is appropriate for the USFA to be oriented to the fire service because the fire service is in turn oriented to reducing the Nation's fire loss. Given its limited budget and staffing, the USFA must rely on an outside network of people, and the fire service is the logical choice because its members are the most intimately acquainted with the Nation's fire problem. Also the present incarnation of the USFA is relatively new—the agency was totally restaffed in 1983. Therefore, some observers feel that a "wait and see" stance must be adopted before an accurate assessment of USFA's current effectiveness can be made.

The question of Federal involvement in fire prevention and control is as complex as the fire problem itself. Two legislative options have been discussed in the past year which are intended to better position the Federal Government's fire effort. Some groups have suggested that the Fire Act be rewritten to emphasize fire prevention and to expand explicitly its scope beyond the fire service. Others have advocated the creation of a new Commission which would critically examine the Nation's fire problem and look at how the Federal Government fits into a solution. All parties agree that fire loss is too high and that more must be done to stop America from burning.

APPENDIX—DESCRIPTION OF USFA PROGRAM*

U.S. FIRE ADMINISTRATION

The Federal Emergency Management Agency's (FEMA) U.S. Fire Administration is divided into four Offices: Fire Policy and Coordination; Firefighter Health and Safety; Fire Prevention and Arson Control; and Fire Data and Analysis. With input from the members of the Joint Council of Fire Service organizations, priorities were established for each of these program areas to guide allocation of the resources of the Fire Administration most effectively to meet its primary goal: Improving fire safety in the United States.

Following is a discussion of the priorities and programs for each office:

OFFICE OF FIRE POLICY AND COORDINATION

Responsible for overseeing the management and administration activities of the USFA and conducting programs which impact on fire and rescue service management practices.

Leadership conferences

Leadership Conferences are planned for a number of groups including State Fire Marshals, Public Fire Educators, Metro Chiefs and others.

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*Source: U.S. Fire Administration.

Private sector initiative

Initiate several new programs to broaden the participation of the private sector in fire programs. A particular emphasis will be on attracting private sector resources for local fire service programs.

Integrated emergency management system (IEMS)

The USFA is working with the nation's fire service on FEMA's long range strategy for improving program implementation in developing Emergency Management capabilities of state and local governments across all hazards.

Volunteer fire service initiative

USFA will carry out an effort to support the volunteer fire service including activities to improve the retention of personnel at the local level and enhance volunteer fire service roles in the total fire program.

Fire executive fellowships

USFA is conducting a number of activities to support the development of the working fire executive roles. This will include cooperating with the National Fire Academy in the development of their Fire Executive Management Program. For example, in FY 1984, the USFA/NFA has initiated a FEMA Fire Executive Fellowship Program with Harvard University.

Coordinated national fire prevention program

USFA will initiate a variety of health and safety, fire prevention and data activities to carry out a national coordinated strategy including public education, residential sprinklers, community volunteer, private sector initiatives and others. In FY 1984, the National Community Volunteer Project was initiated.

Regional fire representatives

Regional Fire Representatives have been established in each of FEMA's 10 regions. The USFA will utilize the Fire Representatives in a variety of supportive activities including the NFIRS Program, community based fire prevention efforts, relationships with state and local fire services and other areas.

OFFICE OF FIRE PREVENTION AND ARSON CONTROL

Responsible for all fire prevention and public education programs and responsible for mitigation of the arson problem in the United States.

The following are various projects within this office:

Community based volunteer fire prevention program

The purpose of the Community Volunteer Fire Prevention Program is to increase the scope and effectiveness of local fire prevention efforts through a unique merger of local, State, and Federal resources through the private sector to support new and existing community fire prevention, education and protection programs.

Residential sprinkler systems program

The purpose of the project is to improve the public and private sectors awareness of the benefits and technological improvements in residential sprinklers, and promote their adoption and use at the local level. Through the increased use of this technology, the level of life and property loss due to residential fires will be significantly reduced.

Juvenile firesetter program

This on-going project has resulted in the development of two handbooks for juvenile counselling. These handbooks help to provide guidance to personnel dealing with juvenile firesetters. A final manual and mongraph are being developed and will culminate in a complete program that will offer direction for personnel when dealing with juveniles from the youngest of children through those in adolescence.

Arson information management system

AIMS is an on-going project that provides a balanced management format for handling arson data utilizing microcomputers. The AIMS system provides data which can be utilized for proactive and reactive strategies. That is, reactive strategies that consist of timely investigation management decisions and proactive analysis used to predict arson prone buildings or situations.

Rural arson project

Two projects in the rural arson area are in progress. The one deals with identifying the arson problem, suggesting strategies to mitigate the problem and finally measuring the success of those strategies. The second project is studying the feasibility of using an AIMS approach in rural arson investigation. Both projects are being closely coordinated so that all information is being utilized by both projects.

AIMS enhancement program

The purpose of this project is to develop AIMS software that will be compatible with the most commonly used microcomputers in use by law and fire service organizations. This will allow the AIMS system to be available to the majority of both services throughout the U.S.

Sesame Street fire safety program

The continuation of this highly successful, award winning project, designed to help communities develop fire safety educational programs for preschool children, will further expand the project to include older children and also develop tools for local fire departments and other organizations to use in establishing Sesame Street Fire Safety Programs locally.

OFFICE OF FIREFIGHTER HEALTH AND SAFETY

Priorities for this office include assisting in the development of improved protective clothing and equipment, enhancement of personnel safety through improved training and improving diagnostic and immediate care procedures for fire victims. Various projects within the office are:

Apprenticeship training

Managed by the International Association of Firefighters, in cooperation with the International Association of Fire Chiefs, is a continuation of support for development and tracking of basic fire training and related work in cooperation with municipal governments.

Project FIRES (firefighter integrated response equipment systems)

Through grants to the International Association of Firefighters, the IAFC and fourteeen cities across the United States, the USFA is continuing research, development, and testing of an improved turnout suit for structural firefighting. The USFA is working closely with industry to encourage the incorporation of new innovations into commercially available equipment.

Low profile breathing apparatus

The USFA will continue to work with the U.S. Bureau of Mines, the U.S. Coast Guard, and the U.S. Divers Corporation in the research and development of a long duration (2 hour) positive pressure, rebreather system. A prototype of this system is currently undergoing manned testing.

Medical management of victims of smoke inhalation

This continuing project will provide a diagnosis and treatment protocol for smoke inhalation victims based upon information derived from a clinical, e.g., emergency room setting. The American College of Emergency Physicians will publish and otherwise disseminate a resulting treatment algorithm through out the appropriate medical community.

Firefighting tools and equipment research and development

This initiative is aimed at identifying innovative tools and equipment applicable to firefighting, modifying or improving on designs where appropriate and transferring that technology to departments across the country.

Fire department safety officer's reference guide

An increasing number of fire departments are expected to establish fire department safety officer positions. The USFA is working with the National Fire Protection Association to develop a safety officer's guide that promises to be a valuable resource for fire department personnel with responsibilities for establishing and managing programs directed at decreasing the incidence of firefighting illness, injury and mortality.

Hazardous materials suit

FEMA Director, Louis O. Guiffrida, has directged the USFA to support and participate in the development of a hazardous materials suit for the fire service.

One of the critical requirement that this suit must have is that is be capable of being donned in a reasonably quick time. The suit will be fully encapsulating and should provide protection against a wide range of chemicals. Protection against the widest range of chemicals will increase the utility of a superior hazardous materials suit.

Smoke detector effectiveness research project

The primary objective of this study is to determine problems affecting smoke detectors. Specific areas of concern include: determine service life; sensitivity, and calibration of smoke detectors.

Firefighters short range communication system

Through a cooperation agreement with the National Aeronautics Space Administration and the U.S. Coast Guard, the USFA is developing a hands-free communications system for firefighters.

Sidewall residential sprinklers

In cooperation with Factory Mutual, the USFA is performing fire test on sidewall srinklers. The results of these tests will be made available to the concensus code organizations.

OFFICE OF FIRE DATA AND ANALYSIS

Priorities for this office are to ensure effective fire data collection on a national basis; to develop a data bank of timely, accurate and retrievable information; and to continue analysis of major and/or unusual fires.

National fire incident reporting system (NFIRS)

To ensure the collection of accurate fire data throughout the United States. The NFIRS program will focus on upgrading the quality and comnpleteness of current data.

Technical improvement and support

Working with FEMA's Office of Information Resoruces Management, the USFA is continuing to collect, process and feedback to users data on the U.S. fire problem. Initiatives in this area will be aimed at developing more useable formats for data feedback, developing an improved version of the NFIRS data collection form and streamling the data collection process.

In addition, the USFA will continue providing technical support and training to users through the National Fire Information Council. Annual and regional workshops will provide users a forum to exchange information and to review innovations in data management and analysis.

Analysis of major and unsual fires

This project will continue in partnership with the National Fire Protection Association and Center for Fire Research, National Bureau of Standards, to develop case studies for use in an Advanced Fire Strategies Course to be offered by the National Fire Academy.

Kerosene heating survey

A National survey is being conducted to determine the magnitude of the fire problem related to the use of portable kerosene heaters in the United States.

Firefighters death survey

A special study will be conducted to gather more accurate statistics on firefighter deaths and their causes. Data will be analyzed to determine how these deaths can be prevented and/or reduced.

Special studies and reports

The USFA will continue to conduct and publicize special studies and reports on current issues facing the fire and rescue service, as well as the annual assessment of the magnitude of the U.S. fire problem. For example, the following project has been initiated:

Fire data management information demonstration project

This project is to assess how local fire agencies actually utilize operational information in making management decisions and to develop system recommendations to allow the use of modern computer technology to assist in making these key operational decisions.

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